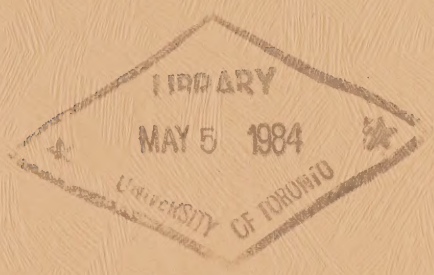


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TRANSIT PERFORMANCE REVIEW GUIDELINES

PART TWO - MANAGEMENT , STRATEGIC DECISION MAKING , PLANNING



JANUARY, 1984



Ontario
Ministry of
Transportation and
Communications



Ontario
Urban
Transit
Association


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FOREWORD - PART TWO

This is Part Two of the Transit Performance Review Guidelines produced by the Ontario Urban Transit Association and the Ontario Ministry of Transportation and Communications, through their Transit Productivity Committee. The Committee includes representatives of transit management and Ministry staff. Its objective is to assist all Ontario transit systems to maximize the effectiveness and efficiency with which they fulfill their responsibilities to their local communities.

The contents of the Guidelines are given in the index which follows. In summary:

- o Part One provides an introduction and background on the purpose of the Guidelines. It also describes the approach and the steps in the performance review process. As such, Part One should be referred to when using Parts Two or Three.
- o Part Two deals with performance in general management, administration, strategic decision-making and planning. These activities determine the overall resources in manpower and equipment needed to run a transit system.
- o Part Three covers performance in the day-to-day operation of the system that relate to the assignment of operators and vehicles to service on the street and to the maintenance of equipment and plant.



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PART TWO

3 GENERAL MANAGEMENT AND ADMINISTRATION

Transit is a service to the community, but it should be run as a business. As with any business, there is a need for both general management and administration. General management addresses the broad issue of coordinating the various activities in a transit property by ensuring communications among them and providing leadership. There is certainly a management component within each activity, and general management should not be viewed as replacing the management of these individual activities which are addressed in the subsequent chapters of the Guidelines. Administration is the variety of activities which support transit, or any other business, on an overall basis. These activities include:

- o Financial Management
- o Marketing and Public Relations
- o Labour Relations
- o Personnel Management
- o Risk Management/Legal/Contracting
- o Information Management.

Thus, this chapter addresses two broad areas which are separate, yet, nevertheless, closely related.

However, the purpose of this chapter, and the others, is not to establish a precise definition of every activity in a transit property but rather to help establish the process that will evaluate them, however they may be grouped. The process should permit you to consider two key issues. The first issue is "WHY", why is this particular activity important to my transit property? To take a different perspective, you may ask what overall effect these activities have on the transit property. For example, how does the creation of an annual budget help me to monitor and manage my week-to-week activities? If you are satisfied that there is a need to perform an activity, you should then address the second key issue. That issue is "HOW", how well do you perform a particular activity? Again, another slant would be to ask if there are ways to improve the performance of a particular activity. For example, how can the budget preparation be improved? If you can address the two key questions of "why" and "how", you will address performance improvement in the area of general management and administration.

What results should you expect to achieve from this self-analysis? Obviously, the Phase One review should point to areas where there are immediate opportunities for performance improvement, as well as areas for further analysis. In addition, the review should produce other results. It should reinforce communications among the various areas within the property, build up the spirit of teamwork among the individuals who are responsible for them, and improve their level of understanding of their part in the overall property. Perhaps the most important result is the establishment of the self-evaluation process itself during Phase One. This process would be used on a continuing basis thereafter.

In order that the guidelines will be useful across a wide range of transit properties, they are general in nature and may not necessarily match the management and administrative structure of your transit property. Activities will have varying degrees of importance among properties, depending on size and organizational differences between them. Accordingly, you should consider how the guidelines can be applied to your property. Some of the guidelines may not apply directly. For example, a small operation with no data processing department may find that the section on information management is not entirely relevant to their current situation, but it may be relevant for future planning. A very large operation may find that information management guidelines could apply to several departments within its organization structure and thus be an important area to consider. Your judgment will be most important in determining the appropriate level of detail for the review of each activity. The evaluation of activities should be prioritized so that those areas with the most potential for improvement receive the primary focus.

Finally, most of the issues in this chapter are quite general, and not specific to transit. As was stated at the outset, transit should be run as a business. The issue is to examine your business, transit, in the context of today's times, to see if it may be possible to improve some of the management and administrative processes that have evolved over time. Transit has many of the same management and administrative requirements that are found in any business. As a result, the same principles apply, and the same questions "WHY" and "HOW" apply whether we are evaluating transit or something quite different.

3.1 GENERAL MANAGEMENT

The primary sub-activities that constitute general management are:

- o the definition of the goals and objectives of the organization, particularly as they relate to the kinds of people who will make up the organization and the performance level to be expected of them. Interaction among managers and between the General Manager and policy group as they set goals is important so that the overall interests of the property will be met. The interaction between the General Manager and the policy group is addressed in Chapter 4, Strategic Decision Making.
- o the identification of the role of all managers, and particularly the General Manager, in establishing and maintaining communications throughout the organization.
- o the identification of the role of all managers, and particularly the General Manager, in delegating work and supervising the performance of that work.
- o the maintenance of an organizational structure which adapts to the changing environment and facilitates while striving to reach defined objectives.
- o the development of a management "style" or "personality" which extends throughout a manager's department or the organization.

This list is a brief summary of the components of management. There is an extensive list of publications which address this topic. It would be misleading to suggest that these next few pages will provide all of the insight that you would ever require to do a complete, thorough self-analysis of general management. Hopefully, they will be a stimulus for positive thought and a vehicle which helps you strive for performance improvement.

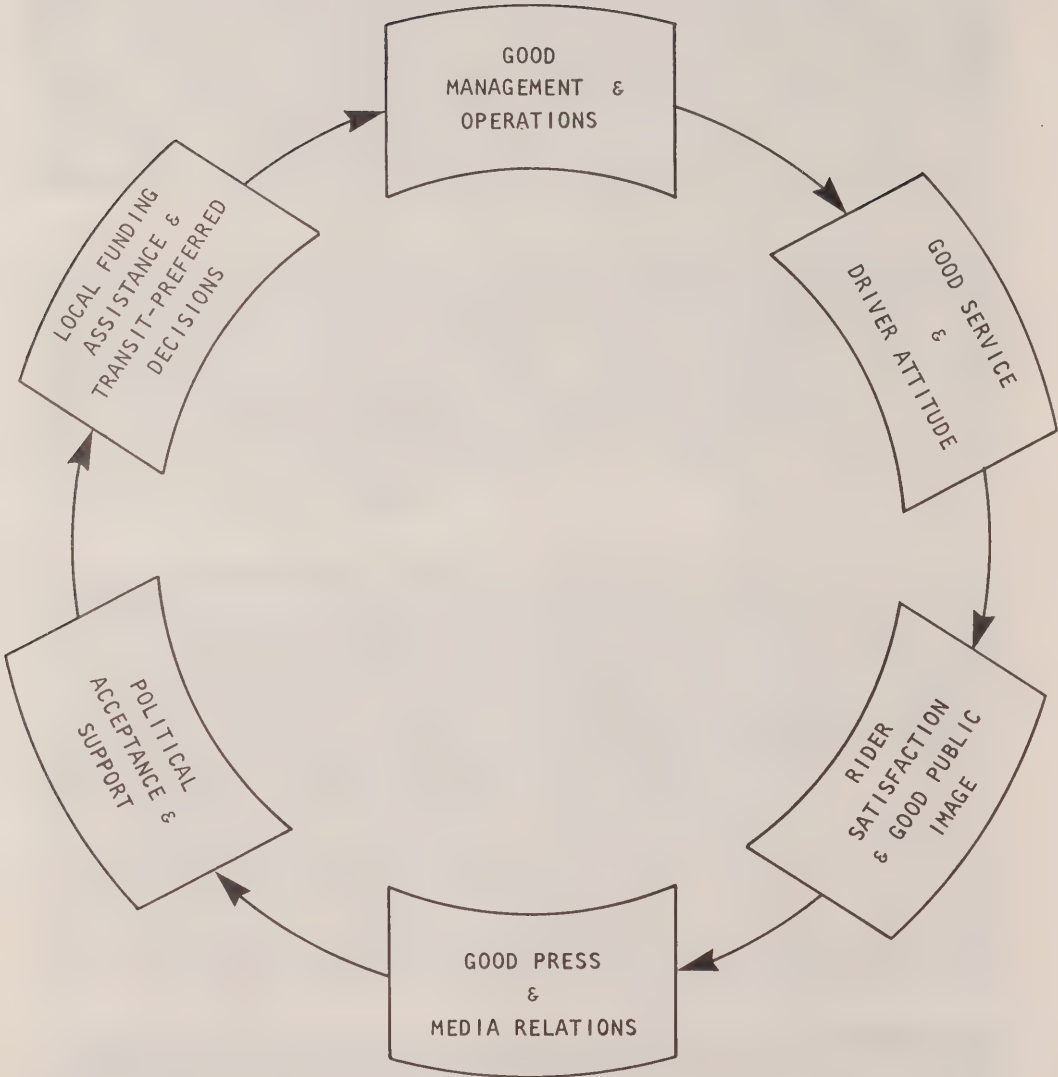
Several factors make the area of management one of the most difficult to evaluate. Much of an organization's impact in this area depends on the personal influence of a few key people. The issue is depicted best by Exhibit 3.1. The figure shows the close interrelationship of activities and how they all fit together to result in a "good" property. There is a direct relationship between the quality of management, their style, and the activities depicted on this figure. It is difficult to be objective in a review of personal influence. As well, the factors and sub-activities in this area are not easily quantified. The management of an organization develops over time and is not changed quickly. It depends on communications, delegation and management style.

Communications - In today's business climate, communications is becoming more and more important. It is extremely important within an organization to ensure that policies and directions are properly transmitted to the people who will be carrying out specific activities. These broad channels of communication constitute a substantial portion of general management. How you communicate, how often, with what media, formally or informally, will significantly impact your management effectiveness and, thus, the overall performance of your transit property. Therefore, it is most important to take a look at how you communicate and how you carry out this important part of the general management function.

Delegation - It is equally important to establish the mechanisms to permit the review and supervision of the activities performed by others. The organizational structure will impact communications both within the property and outside to the Council or Commission members (the policy group) that have overall responsibility for transit. Structure has an important effect on the abilities of managers to delegate and supervise work. It is easier to perform these tasks if you have a clear understanding of who is responsible for specific areas. This issue may be reflected in the accuracy of budgets. While the General Manager has overall responsibility for the property, he probably would delegate budget development to individual departments. However, the General Manager must review the budget setting process; and he must also be involved with the tracking of actual versus budget. There is a fine line between too much and too little involvement from the General Manager on activities such as these. An organization structure that is clearly communicated to the personnel will help prevent duplication of effort and conflicting decisions resulting from several individuals dealing with an issue.

Management Style - Your personal traits and your ability to react to change are also important. There, issues may be reflected in your ability to "sell" ideas to the policy group and to your staff. Occasionally, personalities will get in the way of perfectly good ideas. Those ideas will be rejected, and the overall performance of the property may suffer.

TRANSIT PERFORMANCE LOOP



IF ANY LINK IN THIS LOOP BREAKS DOWN,
EFFECTIVE AND EFFICIENT URBAN TRANSIT MAY NOT BE ATTAINED.

EXHIBIT 3.1

Questioning Performance

Communications, delegation and management style are important since they affect every aspect of system performance. The following questions will assist in evaluating if these areas can be improved.

- o How do you communicate and how do you foster good communications in your property? How could you improve these communications areas?
- o Delegation of tasks - at what staff level will tasks be done most efficiently and effectively? As a manager, you shouldn't get bogged down in details. You should also consider the motivation effect on your staff when they are allowed to "carry the ball".
- o How do managers deal with particular situations to achieve consistency, so that subordinates know what to expect and what is expected of them?
- o What is the span of control under the General Manager? If too many people report directly to the GM, too much time may be spent directly supervising. In reviewing the structure, how much impact would inserting another level between the GM and the staff have on the GM's activities?
- o As a self-analysis, how much time do you spend in various activities such as: meeting with the policy group; delegation; supervision; staff meetings? How much of this time is productive?
- o How might you free up some time to focus on other activities? Some possible ways are: mechanization of repetitive tasks, delegation of the routine portion of a task, e.g., 80 percent, to a less experienced person, with only the exceptions handled by the manager.
- o What standard procedures are currently in use? How could procedures be improved so that tasks can be made routine enough to delegate?
- o What criteria do you currently use in the hiring process? How can you hire personnel with a conscious consideration of their fit with managerial style? One approach is to recognize your own management style, make any changes that would be appropriate to increase your efficiency and effectiveness as a manager, hire personnel who will work best with that particular style.
- o What is the link between accountability and responsibility in the organization structure? How well is this relationship understood by the personnel in your organization?
- o What formal lines of communication exist between departments and within departments?
- o What informal channels exist and how could the use of these informal channels be improved?

- o How do the management personnel in the property keep each other informed to avoid duplication of effort and conflicting decisions?
- o How recently was the formal organization structure reviewed? What changes to the structure might be made to meet the demands of the external and internal environment? What are the effects of: - growing operations? - technological changes?
- o How often do you and your staff attend management training courses, seminars, and conventions?
- o Who approves attendance at such sessions? How is information from these sessions made available to other personnel in your property?
- o What techniques are used to present issues to the policy group to ensure the most favourable treatment?

Performance Indicators

Since it is difficult to quantify factors in the area of General Manager, hard number measurements may not be appropriate as key performance indicators. However, you may want to consider such information as:

- the frequency of meetings attended by managers. This is not an absolute measure in the sense that more meetings or fewer meetings will be better. The key issue is the overall value of the meetings for your property.
- the frequency of analysis of organization structure and goals. As an example, you may work with key personnel to set specific objectives or targets for each person for the coming year. You could monitor how well each person performs in meeting his specific objectives.
- turnover of key management personnel.

As a very broad measure, you may refer to Figure 3.1 and attempt to determine how well your property is positioned relative to those factors. A second facet to performance indicators is the trend of your property's performance to determine if you are continuing to improve relative to the factors presented on the chart.

The sources of information which might be used in a review of general management are: the formal policies regarding managerial evaluation and development; the manager's records of activities performed vs planned activities; the formal business plans of the organization.

3.2 FINANCIAL MANAGEMENT

The primary sub-activities within the financial management activity include:

- o The implementation of budget policies and procedures throughout all departments and the supervision and assistance of budget development by the departments.
- o The operation and supervision of all financial systems, e.g., General Ledger, Accounts Payable, Accounts Receivable, Cost Accounting, Revenue Accounting.
- o The operation and supervision of the Payroll system (treated separately because of its close relationship to Personnel systems).
- o The implementation and administration of sound accounting principles and controls in all financial areas (audit and control).
- o The production of financial and management reporting requirements including: internal responsibility reporting; internal & external financial reporting; and external reporting (e.g., to the Ministry and the policy-making group).

Good financial management is comprised of many sub-activities. This area is important because it allows you, as a transit manager, to understand where you face fiscal constraints, where there may be opportunities to reduce costs and how the actual performance relates to your budget. You must know where the dollars are going and why, and you must be able to communicate that information both down through the organization of the transit property and up to the policy group that oversees the transit operation. This relationship with the policy group is dealt with in more detail in Chapter 4, Strategic Decision Making. In short, you must have a good mechanism for estimating the financial requirements of the transit property and an equally good mechanism to control the actual expenditures. Your review should focus on how the financial area operates and on its impact on the transit property.

The many factors influencing financial management may be grouped into three broad areas: Accounting Procedures; Financial Reporting; and Budgeting.

Accounting Procedures - The existence and maintenance of standard operating procedures to process financial transactions helps you to provide control and accuracy over the recording and reporting of data. Control is important in all areas, but it is particularly important in the cash receipt and disbursement areas. Obviously, you must ensure that receipts are not lost. In addition, careful management of cash, e.g., not disbursing cash until necessary, can have an impact on your cash requirements. Reliability of processing is closely related to control. Reliability is also enhanced by good operating procedures. The result is less effort spent to verify information and correct errors.

Financial Reporting - Reporting is influenced by level of detail. For example, in some properties, the payroll group may provide reports on guarantee time,

overtime, etc. The proper level of detailed information can help operating management make better staffing decisions. Closely related is the timely and accurate preparation of financial and management reports. If information is not timely, it will not be useful. Not only have you not had the benefit of the information, but also you have spent time and effort to produce the wasted data. Mechanization, including computerization, may help both the timeliness and accuracy of the information. It could also relieve a significant processing burden from clerical personnel.

Budgeting - Budgeting is impacted by the processes used to complete the budget. Typically, the finance department would organize and/or supervise the activity; but the various operating areas would actually prepare their own budgets. This approach helps in several ways. It opens up lines of communication so that budget issues in specific areas may be examined in light of overall budget constraints. It also helps obtain the commitment of operating personnel to their own budget. Budget Forecasting is discussed further in Chapter 4.

Questioning Performance

Typical questions that will assist you in assessing the performance of financial management follow.

- o What are your accounting procedures?
- o How recently have the accounting procedures been updated?
- o What opportunities exist to automate procedures, e.g., word processing?
- o What opportunity to update procedures do people that perform the work have?
- o How well do the current controls reduce the risk of errors/fraud? What audit recommendations have been implemented?
- o What activities are performed by internal/external auditors?
- o How do you assess the value of this audit work?
- o What financial and management reports do you currently provide to operating areas? Why are they provided? Who uses them? What if certain reports were discontinued? What if others were added? Would these result in improvements or savings elsewhere?
- o What level of detail is appropriate for reports? Where would summary reports be adequate?
- o How critical are the reports in decision making? How could improvements such as more timely reports or the use of summary information make the information more useful to management?

- o What effect would centralizing/decentralizing report preparation have on efficiency or effectiveness?
- o What effect would automation have on the staff levels required to produce financial information?
- o How are the goals and objectives of the budget process stated?
- o What procedures and policies exist for developing departmental budgets? Do these policies include:
 - A methodology for preparing the budget.
 - Working cost and revenue assumptions.
 - Documented sources of information.
 - Involvement of staff and management in the budgeting process.
 - The use of techniques that require a complete re-thinking of the budget rather than a percentage increase over the previous year.

Performance Indicators

There are a variety of performance indicators that may be used in the financial area. The Revenue/Cost ratio is one of the most widely accepted as providing a snapshot of the health of a property. The trend in this ratio can be easily charted over a period of time. In order to examine a potential problem in more detail, you should turn to variance analysis to get an indication as to the source of a problem. These indicators are useful in describing the overall financial performance of your property. Some of the indicators that follow also would be useful in determining how well the financial management processes are carried out.

Accounting Procedures:

- Errors and delays. Identify those which occur because of confusion or lack of training.
- The number and value of unreconcilable accounting entries as a portion of all entries. This might indicate procedural problems.
- The supervisor/staff ratio. Lack of procedures results in high supervision level.
- Backlogs, overtime and/or use of temporary help might indicate poor planning and/or poor assignment of workload.

Usefulness and Accuracy of Reports:

- Budget variances. Identify the portion attributable to performance and the portion resulting from poor budgeting.
- Timeliness of report preparation and distribution. Percent of all distributed reports received late.
- Accuracy of data presented on reports, i.e., error rate.
- Number of special report requests received. Large, or growing numbers of requests may indicate a need to review the existing reporting structure.
- Number of reports reformatted after initial preparation. This indicates reports are not meeting management requirements.

The information sources for these performance indicators may be obtained from existing incident reports, accounting policies, procedure manuals, financial and management reports. Requirements for change may be identified from audit recommendations regarding procedures and controls, also from requests by management staff for report or procedure modifications.

3.3 MARKETING AND PUBLIC RELATIONS

Maintaining and increasing ridership is essential to the long term viability of transit. While there are many factors that affect ridership, a good marketing and public relations effort can do several things. It can help handle problems and thus, let the ridership know that the transit property is, in fact, concerned with their overall satisfaction. It can also let the community, in general, know about the high quality of transit service that is provided. This information would be useful not only for riders and potential riders but also for the policy bodies that would be involved in funding decisions. When analyzing this area, you may examine how the marketing and public relations activity operates today in light of the overall effect that this activity will have on the transit property.

The primary sub-activities within the public relations function include:

- o The design and implementation of an effective marketing strategy. This would include: an advertising campaign directed at the potential market for the transit property; co-ordinating a marketing strategy with other regional operators such as inter-city bus services, train services, commuter services.
- o The administration of the customer relations activity. This area would include: handling complaints; providing and distributing public information.

Marketing - The effectiveness of the marketing plan depends on how well the plan recognizes all the variables that may affect it, in terms of the nature of the market to be served and how to attract passengers by improving service. Some market research techniques that complement the marketing task are discussed in Chapter 5, Planning.

In addition to these external factors, the marketing plan must be integrated across the transit property. The promises made by the marketing activities must be able to be satisfied in an efficient manner by the operating department. For example, if advertising is urging the public to use transit to get to and from a special event, then you must be able to provide the service - and provide it efficiently. Thus, all management personnel should have input into marketing objectives; and marketing personnel must be familiar with those objectives when they formulate the marketing plan.

Public Relations - Public relations is affected by the resources devoted to handling complaints and the emphasis placed on customer satisfaction by the General Manager. If you are committed to quality customer service, you will devote resources to providing good service and to handling the complaints that do occur. These should in turn reduce the rate of complaints. In addition, there must be proper training of the personnel that deal with the public. They are your first line of contact and, as such, are in a position to resolve issues before they become complaints.

Another important aspect of public relations is to ensure that the public are fully informed on the service provided. Route maps, schedules and information on fares should be readily available at convenient locations and advertised at regular intervals in the media when changes take place.

Questioning Performance

The effectiveness of marketing and public relations has a major impact on ridership and how well the transit service is perceived by the public. The self-analysis review should question:

- o How is the marketing plan developed? How do the various organizational groups, e.g., service planning and operations, participate in the planning process?
- o How well is the marketing planning integrated with the marketing plan(s) of other transit properties or other local services (if applicable)?
- o How has a target market ('Transit Rider') been identified?
- o Who is responsible for monitoring the plan, and how is this monitoring done?
- o How is advertising handled? What is its effect on your property overall? What would happen if you stopped spending for advertising?

- o How could you "turn the tables" on advertising, e.g., get other groups to sponsor promotional events and do your advertising for you?
- o What impact does your Customer Relations activity have?
- o How are compliments/complaints analyzed and acted upon? How do you cross-reference complaints to ensure that a complaint reported by a driver and by a rider is not double-counted?
- o What follow-up is performed on customer complaints?
- o What action, if any, could improve information on the service provided and reduce the number of customer inquiries, e.g., better information on vehicles, better advertising, on-site service representatives?
- o How are supervisors, drivers and clerks who come in contact with the public, made aware of service and marketing objectives? What training is provided to enable them to answer related questions?

Performance Indicators

The marketing cost per passenger and the number of passenger complaints are two indicators that should be significant in helping to determine if there are performance improvement opportunities in this area. These and other indicators would use historical data to show the trend. Other indicators that may be useful are:

- Marketing Cost per Passenger
- Ratio of Marketing Cost to Total Operating Cost
- Number of Passenger Complaints
- Number of Passenger Commendations
- Complaints compared to Commendations
- Number of Information Inquiries
- Increase in Ridership, overall and on specifically advertised services

These indicators may be developed from ridership statistics, the marketing budget, surveys and market analysis, service planning documentation, records of customer complaints and comments.

3.4 LABOUR RELATIONS

The primary sub-activities within the labour relations function include:

- o Negotiation of the labour contract
- o Maintenance of employee grievance procedures and records
- o Compliance with contract requirements
- o Facilitating union/management interaction.

The labour dollar constitutes a very large percentage of a transit property's operating budget. That alone should make it worthy of careful examination. In addition, the tough economic times of the 1980's has placed greater emphasis on labour-management relations. In some cases, this has resulted in more confrontation between labour and management as exemplified by the controversy surrounding wage restraints for government and industry employees across Canada. This type of confrontation does not enhance the performance of any industry. Therefore, it is very important to examine the entire spectrum of activities that relate to labour, including both labour relations and personnel management. You need to examine how you carry out activities in those areas and how you might do it better in the future to enhance the overall performance of your property.

Collective Agreements- Obviously, wage agreements will have a direct and significant impact on financial performance. In addition, other items such as spread time and various work rules can have just as large a dollar impact. For example, various contract work rules may affect the flexibility that the property has in assigning personnel. This can result in less efficiency in the use of personnel and/or the use of additional personnel, as described in Chapters 6 and 7 which deal with transportation and maintenance operations.

Grievance Procedures and Contract Compliance - The existence of standard operating procedures and maintenance of adequate records can help with the administration of this area. For example, formal grievance and negotiation procedures will probably be outlined in your contract; but, by standardizing the use of the procedures, grievance handling and negotiation can be run more smoothly. Standard procedures will also serve to ensure contract compliance and will provide formal documentation of actions taken regarding any grievance or during negotiations.

Communications - An appropriate organizational structure should provide for sufficient interaction between the union and management. Good communications before actual negotiation can reduce the likelihood of a strike or an unsuitable settlement, and they can help ensure that the bargaining table is not cluttered with insignificant issues. Communication channels can be defined to a great degree by a formal organization structure, thus ensuring a higher level of union/management interaction. The establishment of the organization structure must also provide for receipt of information on potential problem areas through informal channels.

Questioning Performance

Your ability to anticipate and plan for union demands will directly affect your success at the bargaining table and will lead to the development of better union/management relations. Labour planning could involve building scenarios of and projecting the costs of anticipated union positions. You should be aware of the effects on the total cost structure of changes to work rules, benefits, and hourly rates. You should involve all functional areas of the property in the labour planning process and question how effective it is. Typical questions are:

- o What is the current state of the contract? How do new work rules, as an example, impact overall performance? How has the contract changed from the previous version? Was this under management control? If the contract has had numerous amendments included over the years, are the various clauses consistent?
- o What policies exist regarding the long term expectations for negotiation and contract development?
- o What formal procedures are in existence regarding grievances? What documentation exists to support the procedures? How do you ensure that procedures are followed closely enough to guarantee proof of action in a grievance case?
- o How are contract negotiations handled? Who participates? How do the various functional areas in the property impact this process? What planning activities are conducted?
- o What are the formal and informal communication channels between union and management? How well do these channels operate?
- o Where do you stand relative to the rest of the industry, the rest of the community? The perception is as important as the reality, e.g., if labour believes they are "falling behind", they may be more inclined to take a tougher position.
- o What is the overall economic condition of your property? community? province?
- o How will your actions affect you in the short- and long-term? What precedents or trends will you be setting (items that may be desirable today may have an adverse impact tomorrow)?
- o What information is available to you to permit good labour management?
- o Do procedures and communications support each employee's role and do they foster a sense of commitment and pride in their work?

Performance Indicators

Absentee hours/total hours by class and turnover by class are two key indicators. Again, trends rather than absolute numbers are the significant items. In the area of labour, as much as anywhere, good information is important to be able to do a good job. For example, you must be able to recognize that an individual has had an absentee problem before you can start a program to address the problem. This recognition depends on proper information. Enough detail and history is required to provide an accurate picture. Other indicators may also be useful:

- Absentee or strike hours by employee class/total hours by class
- Employee complaints by employee class/total employee complaints
- Contract negotiation rate
- Driver cost/operating hour
- Driver cost/revenue hour
- Operating hour/revenue hour
- Disciplinary action rate by employee class/total
- Turnover by employee class
- Employee complaints by employee class

Information sources to assist in developing these indicators are the labour contract, grievance procedures and records, personnel records, negotiations procedures and records.

3.5 PERSONNEL MANAGEMENT

The primary sub-activities within personnel management include:

- o Recruiting and selecting personnel.
- o Evaluating employee performance formally and informally and relating evaluations to productivity and compensation.
- o Administration of disciplinary actions, including dismissal.
- o Setting salary and benefit policies after analysis of salary levels and fringe benefits by employee class.
- o Administration of benefits, deductions and claims.
- o Developing and administering employee training programs.

- o Administration of career progression planning and definition of its relationship to training and compensation.

Recruitment - The existence and maintenance of standard personnel recruitment procedures can influence all areas of personnel management. Standard methods for recruiting and selecting personnel help provide a consistent level of quality. The various operating departments should participate in the establishment of these criteria.

Performance Evaluation and Compensation - The existence of a formal system of evaluation with a well-defined basis for measurement of performance is important. This process forms part of the basis for salary increases and promotions. A process for establishing and maintaining up-to-date job descriptions and setting appropriate salary scales and benefits complements the evaluation process.

Maintenance of adequate records to track personnel data is important. Management needs information on status of personnel data and costs. However, the procedures and information that support disciplinary actions are critical. In today's climate, virtually all organizations may be subject to legal action as a result of a dismissal. Personnel Management must be prepared to support such action by being able to show that progressive disciplinary actions were taken, attempts were made to help the individual correct the problem and that the individual actually is detrimental to the property.

Training - Procedures to ensure consistency and relevance of training programs and to ensure that all employees have the opportunity to improve their performance and advance in the organization are also important. The proper level and experience of staff in Personnel Management will affect performance. Staff should have adequate supervision, training and/or experience in this area.

Questioning Performance

The following questions will assist in the review of personnel management activities:

- o How is the recruiting process initiated?
- o Who participates in the recruiting process and to what extent? Who makes the final decision on job offers?
- o How satisfactory is the recruiting effort, e.g., what is the turnover?
- o How does the formal evaluation process work? Who conducts reviews? How often are they done? What is the feedback/follow-up process? How do reviews impact salary/promotion? How do employees perceive this impact?
- o What informal evaluation system exists to give feedback to employees regarding their performance?

- o What effect does the evaluation process have on your staff?
- o What training do supervisors receive to evaluate staff and give appropriate feedback?
- o What training programs are in effect? Who are they aimed at? What are their objectives? Who administers and conducts them?
- o How much employee time is dedicated to training? Should this be reduced or increased? How may improved operating procedures reduce the training effort?
- o How effective is the training? How do you measure its effectiveness?
- o How many employees suggest or make procedural improvements which relate to their own job?
- o How is compensation administration executed? Who participates? How do other departments impact the process? What information is used to monitor progress?
- o How can automation assist with sub-activities in the personnel management area? What is currently automated? What plans exist for additional automation of personnel records?
- o How are disciplinary actions handled? What records are kept? What is done to avoid repeat incidents? What follow-up is done?
- o How is excellent performance recognized? How is this documented? What feedback process exists? What follow-up is done?

Performance Indicators

The following indicators will assist in evaluating the personnel management area:

- Average training hours/employee by employee class.
- Percentage of employees overdue for performance evaluation.
- Cost of benefits administration.
- Percentage of unfilled positions.
- Average duration of vacancies.
- Turnover rate.
- Percentage of promotions from within.

The information that will be of assistance in the review process includes: documentation on personnel recruitment and administrative procedures; employee job description and evaluation forms; training plans and training records; personnel inventory and salary records; financial reports, detailing salary and benefits information.

3.6 RISK MANAGEMENT/LEGAL/CONTRACTING

The primary sub-activities within the risk management/legal/contracting function include:

- o The administration of the insurance program.
- o The administration, management, and evaluation of contracts.
- o All other legal activities.

Risk Management - Risk management is affected by the size of the property, the claims history, and the trends in this area. It will also be affected by the procedures established to obtain insurance and to handle claims. For example, the property may self-insure or combine its insurance needs with the city's. As another alternative, all insurance and claims may be handled by a third party. There are many options and many different cost implications.

Contracting - Contracting will be affected by the nature and amount of this type of activity. For example, if a large amount of maintenance work is contracted out, there should be good procedures to monitor this activity. Again, there are many alternatives to awarding contracts. There is also a need to monitor the performance of individual contracts.

Questioning Performance

The following questions will assist in reviewing this area of administration:

- o Who manages the insurance program? How could outside assistance be used to help administer this program?
- o What is the economic performance of the insurance program? How do premiums and commissions compare to claims and deductibles? How do the costs of marketing risks compare to self insurance? What, if any, areas may be excluded from coverage?
- o What areas of the business are most risky? How can the risk be controlled? What is the largest possible claim and probability?
- o How can risks be reduced by better employee training and safety programs?

- o What areas of activity are currently sub-contracted to outside suppliers?
- o How do you determine whether you should move toward more or less contracting?
- o What are the economics of bringing existing contracts in-house, sub-contracting current in-house activities?
- o Who handles contract administration?
- o How are contracts awarded: by tender or by negotiation? What is most appropriate?

Performance Indicators

The following indicators will assist in reviewing the performance of risk management and supplier contract management.

- Kilometres between accidents.
- Insurance cost/revenue km.
- Insurance cost/hour.
- Insurance cost/total cost.
- Average claim settlements.
- Lost time due to employee injuries per employee hours or per vehicle kilometres.
- Claims/vehicle.
- Claims/operator.
- Contract cost/total operating cost.
- Contract cost trends.

These indicators can be assembled using information from various sources. In the area of claims these include: accident statistics and reports; reports on outstanding claims and claims cost; and workmen's compensation claim reports. Information on the effectiveness of contract management may be obtained from annual budget and financial reports, contract billings and financial reports of overruns.

3.7 INFORMATION MANAGEMENT

Information management addresses a wide variety of information needs. However, in this chapter, the information requirements of various areas are covered in the sections that pertain to those areas; and this section deals primarily with data processing activities. This should be an area for review even where there is a current lack of data processing. With the continuing decline in the cost of computers, the benefits of data processing will soon be within the reach of most properties. Those who do not use data processing methods may view this section as preparation for the not-too-distant future.

The primary sub-activities of Information Management are:

- o Information systems planning and policy development
- o Development of new systems
- o Operation and maintenance of current systems
- o Technical support
- o On-going liaison with systems users

Standard procedures include a methodology for the development, implementation and support of information management systems. Such a methodology is important to the success of information management because it will assist management to maintain and enhance systems. In a related area, the knowledge level of staff will affect the quality of work. Selective hiring and the provision of in-house training will improve their performance.

The formal structure should provide for communication between users and the information management department. Users should participate actively in designing the information system to ensure that it meets their needs. Informal communication channels are also important to help the information management department deliver the correct service.

Questioning Performance

The questions that will assist in reviewing the effectiveness of the management information system follow.

- o How well does the data processing department serve user needs? How many requests do users submit? How are new requirements anticipated and planned for?
- o What formal or informal channels exist to ensure that users participate in the systems development process?

- o What development aids are being used? Software tools? Development methodologies? Outside services? Software packages?
- o How are new systems justified on a cost-benefit basis?
- o How timely is the development of new systems and the operation of existing systems?
- o What training is available for data processing personnel?
- o How old are existing hardware and software systems? How will replacement schedules impact the budget?
- o How does the data processing activity report to management?

Performance Indicators

While there are a variety of key indicators, the actual cost of the information system versus the budget and the growth of the budget point to the amount of your resources devoted to data processing. You should expect that as you spend more in this area, you will get more positive feedback from your users. You might also be able to identify benefits that result in other areas of the property. Performance indicators include:

- Feedback from management and users regarding systems
- Cost allocations to user departments
- Average technical training hours/employee
- Average output per programmer
- Hardware resource utilization/hardware capacity
- Age of hardware
- Age of application systems
- Number of modifications/corrections per month to systems in operation
- Actual performance vs. schedule
- Data processing actual costs vs. budget

Sources to assist in obtaining the above include: formal data processing policies; audit recommendations; systems development methodologies and plans; training plans and manpower plans; user requests and trouble reports; project status reports; employee time reports.

3.8 SUMMARY

The review procedure should follow the general outline presented in Chapter 2, of Part One. The primary objective is to initiate the process, to take a hard look at yourself to determine where there is opportunity for performance improvement in the areas of general management and administration. You will have to ask "WHY" you do things; that is, what effect do they have, are they needed? If they are needed, you will have to examine whether the various processes can be improved. Often, it's easier to go the other way - to determine what the process is and then, virtually automatically, to determine the ultimate value of the process.

There are many performance indicators listed on the preceding pages and in the subsequent chapters of the Guidelines. That should not suggest that they should all be used. They are examples of data that may be helpful to indicate performance. In fact, if you were to use all the indicators, you would probably be spending far too much time on a particular part of the analysis.

The area of general management will be the most difficult to review because the issues are very subjective. In most cases, they deal with quality of communications, not quantifiable measures like cost per kilometre. Nevertheless, you should document the results of your review. That documentation would indicate whether this area can be modified to improve the overall performance of your property whether the area should be subject to further review. The key issue is communication; how to ensure that ideas are properly transmitted, how to encourage and motivate staff, in short, how to get the most out of your personnel.

All of the other review areas should also be documented. The review report should contain the findings of the self-analysis and recommendations for any further analysis or for any procedural changes. Each section would list positive findings and comments as well as identifying areas for further study or specific improvement. Recommended changes should be described at a level of detail which will be useful for implementation. An important aspect of the report would be to identify those activities with the highest priority. Since not all changes can be made at one time, it is critical that those recommendations which will have the largest positive effect and can be readily implemented are tackled first.

And finally, there are many facets to the activities that comprise general management and administration. Communication is very important to the overall success of a transit property. Attention to financial management issues such as budget preparation and variance analysis and to labour items such as negotiation and grievance handling is very important to the administrative area. These activities can have a significant impact on the overall performance of a transit property. You should examine these activities to better understand why they are important and how you might perform them better.

4 STRATEGIC DECISION-MAKING

Strategic decision-making is planning ahead. This is accomplished through setting goals and priorities, evaluating and making decisions concerning service levels and budgets, and determining the resources that will be allocated to the transit system. As such, the strategic decision-making process has a significant impact on the performance of the transit system and the way that things are done by the transit organization.

Strategic decisions are made by a policy group on the advice of transit management. The policy group, which can be an elected Council, Commission or a Committee or Commission appointed by Council, is responsible to the public. Transit management, on the other hand, is responsible to the policy group and, consequently, the policy group's decisions form the framework within which transit management must carry out its responsibilities. Therefore, transit managers have a key role in keeping the policy group fully informed of the various factors that influence system performance so that its decisions can be made in an informed way. This means having frequent and close communications between transit management and the policy group so that there is an understanding of the expectations on both sides. It means providing background information which not only recognizes these expectations but also the capabilities of the people within the transit organization. And importantly, this means recommending and setting service standards, policies, and budgets as the basis for maintaining an efficient and effective transit service.

This chapter covers the activities which assist transit management and the policy group in strategic decision-making. These include:

- o Strategic Planning;
- o Service Standards and Policies;
- o Revenue Policies;
- o Resource Policies;
- o Budget Forecasting.

The following sections provide guidelines to enable management to review and evaluate performance in these important activities.

4.1 STRATEGIC PLANNING

Transit management is regularly faced with the need to respond to requests for service changes from the public and the policy group. In formulating its response, transit management has to have a "strategy" or overall plan against which these proposals can be evaluated by management and the policy group. While strategic planning is not new, as all transit organizations practice it in one form or another, what is new is the approach which must be taken to strategic

planning in times of slow economic growth and rapid technological change. In this atmosphere, good strategic planning is essential to achieve a high level of performance and public acceptability of the transit system.

Good strategic planning is a continuous process of discussion between transit management and the policy group to reach an understanding of the factors which influence the performance of the transit system. It questions where we have come from, where we are today, and where we should be going in relation to the expectations and concerns of both sides. While transit management and the policy group may not always agree on what decision should be made, at least the decisions will be made in an informed way.

The strategic planning activity of management provides the background information on which the policy group makes decisions on its service, revenue and resource policies. While the background information will vary considerably depending on the size of the transit property, or the detail desired, generally transit management provides information which shows the present position and future prospects for the transit system in the context of current and future trends in social and economic development. This is used to determine how performance might be improved if present policies are changed. Important background information for this purpose are indicators which show the trends in transit ridership, revenues, service levels, costs and tax burden. Equally important as background are the indicators which show the trends in municipal demographics, assessment, and budgets so as to put the transit service in perspective with the other services provided in the community.

Graphic examples of this information for groups of Ontario transit properties are given at the end of this Chapter.

What is important is to be aware of the trends which may be occurring for each indicator in your community. The relationship of one indicator to another will help identify the factors which have influenced the performance of the transit system in the past and the factors which are expected to influence the performance of the transit system in the future. Simply stated, these interrelationships provide a good indication of future threats and future opportunities.

Accordingly, when developing strategic plans, the following influencing factors should be considered using the best information available.

The External Environment - in terms of national and regional social and economic trends, population shifts and aging trends; in terms of employment opportunities and government industrial/technological strategies; in terms of trends in energy cost and automobile use; and trends in all levels of government policy with respect to economic development, technological development, and transit financing. An awareness of these external influences will colour how optimistic or cautious to be in setting longer term goals.

The Local Environment - in terms of the particular aspects of the local municipality which may differ from the above over the short and longer range future. These include the trends in: local population (including distribution by

age groups) and employment; land use development; municipal assessment and financial capability; trends in wages and retail trade. These are specific to each community and as such will govern the direction to take in planning for needs beyond the short term.

The Local Travel Needs - in terms of automobile use and road needs, the basic mobility needs and priorities of special interest groups, the relationship between land use development and the transportation system, the role of the transit system in meeting these needs, specific objectives for achieving this role by the transit organization. These determine what the transit system is expected to do in meeting the overall transportation needs in the community.

The Local Transit Needs - in terms of the trends in ridership and service levels, the serving of new development, the costs needed to accommodate the trends and the growth in service, and the fare structures and rates which are needed to keep the financial performance within the capability of the municipality. These establish what resources have to be provided to fulfill the specific transit needs in the community.

These four groups of factors determine the position and future prospects for the community as a whole, and from this the position and future prospects for the transit system within the community. A knowledge of these influencing factors is essential if there are to be informed decisions by the policy group and in particular those related to the service, financial, and resource policies which management requires to operate efficient and effective services. Chapter 5, Planning, deals with service planning, operations planning and market research, all of which provide feedback and background information to assist in strategic planning.

Questioning Performance

The indicators of strategic planning performance are those which are related to the ability of transit management to keep the policy group informed. This can be determined by assessing the answers to the following questions.

- o To what extent does the Official Plan establish realistic prospects for the transit system? The Official Plan should be the source of much of the environmental and travel-related information on which strategic decisions are made.
- o To what extent is transit management given the opportunity to take the initiative in informing the policy group of strategic issues? In some municipalities, transit management is only expected to respond to requests which come down the line from the policy group.
- o To what extent is the political climate conducive to change and to supporting management when changes are made? To what extent is there a strong commitment by the policy group to maintain or improve the position of the transit system consistent with the overall prospects for the municipality?

- o To what extent are there clear on-going lines of communication between the policy group and transit management? To what extent is there a regular forum for sharing and debating divergent views? To what extent does management have the opportunity to discuss the strategic significance of individual decisions with the policy group before changes are made?

Strategic planning is thinking about and being prepared for the future. Thus it is applicable to all transit properties, irrespective of the type of transit organization or its size. It is equally important to the small and large transit property. The only difference being that a separate group within the transit organization may do the strategic planning for larger properties, whereas the Transit Manager may do the strategic planning in the smaller properties.

4.2 SERVICE STANDARDS AND POLICIES

A key strategic activity of transit management is the formulation of overall transit service standards and policies for the transit system. Service standards are used to plan the route structures and headways for the transit services. Service policies, which are derived from the standards, establish the broad parameters of the services from the social and political perspective and as such are approved by the policy group.

Service standards cover the parameters of the service as an aid to policy formulation and service planning. Examples of parameters include:

- service area
- minimum and maximum loadings per vehicle;
- maximum headways;
- average passenger walking and waiting times;
- average boardings per vehicle hour;
- weekday and weekend hours of service;
- frequency of transferring;
- average operating speeds;
- on-time performance;
- bus stop utilization and spacing;
- average route spacing;
- warrants for service extensions.

Service policy formulation involves determining which of the above standards need to be adopted as a matter of policy by the policy group and which of the above standards need to be used only as a guide by the planner. The decision is based on the extent to which the policy group wishes to give transit management the flexibility to provide efficient and effective transit services. For example, service standards are intended to guide the planner in tailoring route structures and headways efficiently to the demand and operating conditions. However, the policy group may wish to have the opportunity to introduce a new route or type of equipment for strategic rather than demand reasons, such as to encourage development, create jobs, or meet an obligation to senior citizens. In this case, the adoption of certain service standards may limit this flexibility because the loading or revenue standards may not be attainable.

Questioning Performance

In reviewing service policies and standards, these should be examined to confirm that they are appropriate to current conditions and to identify any areas where they might be changed to improve performance. Questions to assist in this regard follow.

- o What are the service obligations as set by legislation and/or by-law, as defined in policy statements, and as reflected by the political philosophy of the policy group? To what extent are these realistic considering changing market and economic conditions and any likely funding constraints?
- o How are the overall service and ridership targets established by management and the policy group for the transit organization? To what extent are these levels attainable considering the nature of the transit system and the service area's environmental and operating conditions? What is the impact of social, developmental, and industrial strategies on the performance of the transit system? Are service levels in fact effective in supporting these strategies?
- o What is the role of the policy group versus transit management in the development and application of service policy? To what extent are the policies broad enough to be useful over extended periods, and to give transit management the flexibility to adjust to operating procedures and services to keep within established budgets? To what extent does the policy group keep within established budgets? To what extent does the policy group become involved in day-to-day operations? There should be minimum involvement otherwise management's responsibility, credibility and accountability will be diminished.
- o How is performance reviewed? To what extent does transit management routinely review the overall performance of the transit services against established service standards? Are there established service standards, and if not how is the overall performance assessed? What actions are taken if performance falls below expectations? Are service standards or policies changed or are the routes restructured?

- o How are policies and standards used in the decision-making process? To what extent are service decisions made on an ad-hoc versus a systematic basis by which the service and cost impacts are logically considered? How does transit management work with other city departments and the policy group in setting the priority for transit services, and in allocating funds between transit and other community services?

Performance Indicators

In reviewing service policies, strategic performance indicators should be chosen such that interrelationships between service levels, ridership levels (effectiveness) and cost (efficiency) can be questioned. Accordingly, each indicator has to be expressed on the basis of a unit which is representative of the service area, such as per capita, which is the most common unit and is the simplest to measure.

For this review, the following strategic indicators are suggested.

- Ridership Level - the single most important indicator of service effectiveness is ridership level, as expressed by annual revenue passengers per capita. This indicator is important because the goal of transit is to serve passengers.
- Service Level - a reasonably representative indicator of service levels is annual total kilometres per capita. While annual revenue hours per capita could also be used, this indicator is influenced by the operating speeds and therefore is not a true indicator of the service offered the public.
- Tax Burden - a good overall indicator of service efficiency is the net cost to local taxpayers which is expressed as the net deficit per capita. Net deficit is total operating cost less revenues from all sources including MTC subsidies. In addition to this operating cost indicator, a capital cost indicator might be used, such as net capital expenditures per capita, to show the trend in capital expenditures.

Ridership and Service Levels - Ridership levels generally vary by size of property. Small transit systems, serving populations under 100,000 people, tend to have ridership levels of under 50 annual revenue passengers per capita depending on the service level. This usually indicates that the urban transit system is serving primarily captive riders who have no other choice of mode. Medium transit systems, serving populations of 100,000 to 1,000,000 people, tend to have ridership levels between 50 and 100 annual revenue passengers per capita depending on the service level. This usually indicates that the urban transit system is serving both captive and non-captive riders. Large transit systems serving populations over 1,000,000 people, tend to have ridership levels over 100 annual revenue passengers per capita and this usually indicates that many of the of riders on the urban transit system are non-captive and are using the system by choice.

There are instances, however, where ridership levels do not follow this pattern because the transit system is limited to a particular type of service; for example, feeder services to the line haul services of another carrier. A low ridership level therefore is not always indicative of poor service performance. On the other hand, there is a direct relationship between service levels and ridership levels. As shown in Exhibit 4.1, if there is no change in fares, ridership levels will usually increase if service levels are increased but at a diminishing rate. Thus it is possible to evaluate the effectiveness of the service policies by comparing the actual service level to that experienced in the past, or to that normally experienced by other properties with the same ridership level. If there is a significant difference, then the policy group may have set its service levels too high relative to the demand, or there may be some other factor (such as the nature of the service area) which has limited the market.

Tax Burden - There is a direct relationship between service levels and tax burden. Below a per capita ridership of about 40, net deficits are about \$5-\$10 per capita (1982 dollars), which is indicative of small transit systems or systems with low service levels. Between a per capita ridership of 40 and 60, net deficits range from about \$10-\$15 per capita depending on the service level which is indicative of medium transit systems. Above a per capita ridership of 60, deficits range up to \$25 per capita which is indicative of large transit systems. The larger deficits are caused by the fact that increased service levels, in many cases, attract new riders who use the service during peak periods when they are at capacity.

Using comparative information of this nature, it is possible to evaluate the efficiency of the service policies. This compares the actual deficit per capita to that experienced in the past adjusted to reflect inflation, or to that experienced by other properties with the same ridership level and service level. If there is a significant difference, then the policy group's pricing policies or the transit organization's fiscal and resource policies may not be appropriate, or there may be some other factor such as operating inefficiencies which has increased the costs.

It should be noted that a high net deficit per capita, if there is a corresponding high ridership level, does not necessarily imply poor performance. The goal of the policy group may be to attract as many riders as possible to the transit service as a means to reduce traffic congestion and offset more costly road improvements. On the other hand, if there is no such goal, then a high deficit per capita should be questioned to determine if there are less costly alternatives for moving people or if revenues can be increased.

4.3 REVENUE POLICIES

An important strategic activity of transit management is the formulation of revenue policies for the transit services including fare structures and rates of fare, also revenue policies for other services such as charters and advertising. This activity provides the pricing framework for the financial management activity of the administrative function as described in Chapter 3.

1981 SERVICE LEVELS FOR CANADIAN URBAN TRANSIT SYSTEM MARKETS OF VARIOUS SIZES

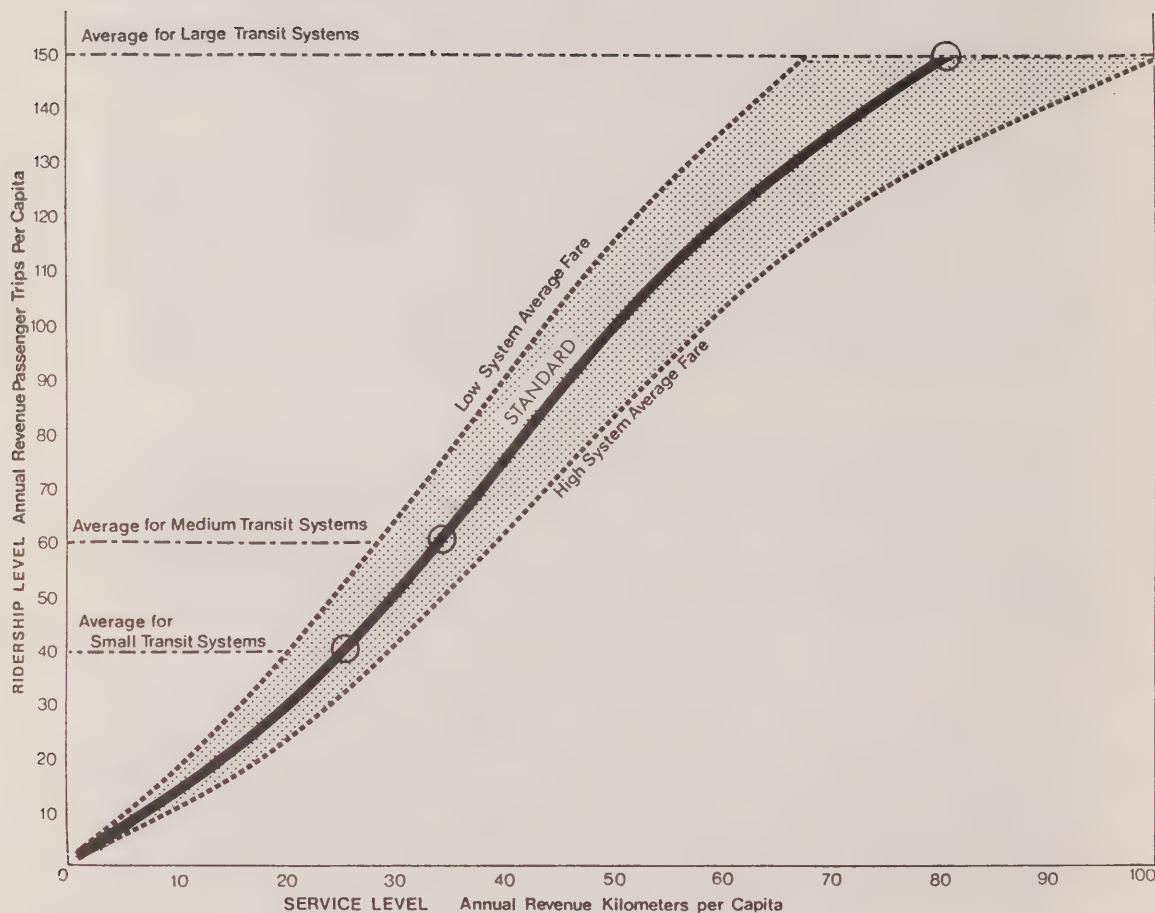


EXHIBIT 4.1

Revenue policy formulation involves determining the share of operating costs which should be taken from the farebox, from other sources, and from the general revenue of the municipality, including the share which should be assumed by other municipal departments and, if applicable, by other municipalities and governments within the transit service area. With this information, transit management proposes fare structures and rates for the approval of the policy group, including various concession fares and pass rates to satisfy its social objectives.

Questioning Performance

In reviewing this activity, the following questions will assist in confirming if revenue policies are appropriate to meet current conditions and in identifying any areas where they should be changed so that performance can be improved.

- o What are the revenue obligations as set by by-law, as defined in past policy statements, and as reflected by the political philosophy of the policy group? To what extent are transit services expected to break-even within agreed cost-sharing arrangements? To what extent is the transit organization expected to assume the cost of discounted fares for special user groups such as senior citizens or is this the responsibility of another department?
- o What are the overall revenue levels which the policy group has established for the transit organization? To what extent are these levels attainable considering the nature of the transit system and the service area's environmental and operating conditions? Do they simply reflect an escalation factor over last year's revenue budget or do they take into account the value of the product and price elasticities? To what extent are the fares charged special user groups reviewed to confirm that their supporting agencies are paying their fair share of costs. To what extent are monthly passes priced according to usage? Are the costs and benefits of reduced rates for passes and other fares evaluated?
- o To what extent does transit management routinely review the overall revenue performance of the transit system? Are there established revenue standards, and if not how is the overall revenue performance assessed? What actions are taken if performance falls below expectations? Are revenue policies changed or are the routes restructured?
- o To what extent are revenue decisions made in isolation from service decisions? To what extent does transit management provide the policy group with reports on how price increases might be reduced by delaying service improvements or cutting unproductive service? Is the policy group willing to increase fares commensurate with the escalation in costs, and to reduce fare discounts if necessary?

Performance Indicators

In reviewing revenue policies, the following strategic indicators are suggested:

- Revenue Performance (or user burden) - from the pricing perspective, the most commonly used indicator is annual passenger revenue as a percent of annual operating cost or revenue-cost ratio. This indicates the share of operating costs which are assumed by the users and, as such, is a useful tool in pricing decisions. This indicator can also be expressed as passenger revenue per passenger.
- Cost Performance - from the pricing perspective, a good indicator is annual revenue passengers per dollar of expense. This indicates the dollars which are spent to produce a given ridership level and is a cost-effectiveness measure which is independent of the fare structure. This indicator can also be expressed as total operating cost per passenger or operating deficit per passenger.

Revenue Performance - Revenue performance generally varies by size of property. In Ontario, because of the Provincial subsidy formula, small transit systems are moving towards a revenue performance of 45 to 50 percent, medium transit systems towards a revenue performance of 50 to 60 percent, and large transit properties towards a revenue performance of over 60 percent.

There are instances where the revenue performance does not follow this pattern because the operation is limited to a particular type of service, such as feeder services to line-haul commuter services, or is limited by the service area which may not have matured to the point where it can support efficient services. Consequently, a low revenue performance may not necessarily be capable of improvement by the policy group or management without some major changes in policy. Therefore, it is extremely important when reviewing performance to recognize the non-controllable factors which influence revenue policy and, where possible, to identify what they are and how they impact the revenue performance.

Fare Levels - On the other hand, fare levels are an important item which is controllable by the policy group and which has a major impact on revenue performance. Over the past decade, many policy groups have attempted to attract riders by discounting fares. This has met with only limited success because the transit-dependent market are captive to transit regardless of the price, and the non-transit-dependent market are more sensitive to the level and quality of the service than to its price. Thus, fare discounts usually result in a lower revenue performance and higher deficits. Generally, the transit properties who have the highest revenue performance in their size category, have simple fare structures which recognize the value of the product, charge rates which are commensurate with use, and recover losses from discounted fares for special user groups from those agencies who traditionally support such groups. Accordingly, if the revenue performance is worsening or is low relative to other transit properties, the pricing and cost-sharing mechanisms of the policy group should be reviewed, as this is likely one major source of poor financial performance.

4.4 RESOURCES POLICIES

A strategic activity of transit management is the formulation of fiscal, material and staff resource policies for the delivery of the required transit services. This provides the policy framework for both the line operating functions and the administrative support functions within the transit organization, and is normally approved by the policy group.

Policy formulation in this area normally involves determining for a given service and revenue level: the method of operation - public operation or private contract; the organizational structure including the accountability and responsibilities for line and support functions; the qualifications of management, the practices which should be applied by the organization with respect to recruiting, procurement and labour negotiations; and; the capital expenditures and staff compensation levels which should be achieved.

Questioning Performance

In reviewing this activity, the following factors should be examined to confirm that they are appropriate to current conditions and to identify any areas where performance can be improved. Questions to assist in this regard follow.

- o What are the resource obligations as set by by-law, as defined in past policy statements, or as reflected by the political philosophy of the policy group? To what extent do these influence recruiting and training procedures, the terms of collective agreements, labour management relations and practices, purchasing and tendering procedures?
- o What are the overall resource levels which the policy group has established for the transit organization. To what extent are these levels attainable considering the nature of the transit system and its service policies? For example, are freezes in hiring and major purchases justified? What would be the impact on resource levels of privatization strategies, changes to collective agreements, improved labour management practices?
- o What is the role of the policy group versus transit management in the development and application of resource policy? To what extent are the policies broad enough to be useful over extended periods, consistent with the policy group's service and pricing policies? To what extent do they give transit management the flexibility to efficiently accommodate growth and change in operations and inflation in costs?
- o To what extent does the policy group get involved in routine hiring/firing decisions, labour negotiations/grievance arbitration, and normal expenditure decisions? There should be minimum involvement otherwise management's responsibility and accountability will be diminished.
- o To what extent does transit management routinely review the overall performance of the transit system's fiscal, material and staff resources? Are there established resource standards, and if not how is the overall

resource performance assessed? What actions are taken if performance falls below expectations? Are resource policies changed or is the organization and its procedures restructured to keep within policy?

- o To what extent are resource decisions made in isolation from service and revenue decisions? To what extent does transit management advise the policy group on how to develop the organization to meet growth and change? Does the span of control of the organization cover all major transit functions - planning, operation, maintenance, finance, personnel, marketing? Are lines of authority clearly defined in order that the policy group can hold its managers accountable?
- o To what extent does transit management provide the policy group with reports on how fiscal, material, and staff resource allocations might be changed to make the transit operation more productive, thereby freeing resources for service extension and technological improvements?

Performance Indicators

The resources available to operate transit systems are often constrained by limited funds which require that the performance of fiscal, material, and staff resources be maximized, to the extent possible, within established service and revenue policies. While there are a large number of measures which can be used to indicate the performance of transit resources, most of these are specific to a particular transit function and as such, are related to the day-to-day activities of the managers of these functions. From the strategic point-of-view, there are only a few indicators which reflect the overall performance of resources, although measures such as annual revenue passengers per employee and per vehicle do provide an insight into the resources that are required to serve a given ridership level.

Accordingly, strategic indicators should be chosen which relate some unit of production to some unit reflecting the resources required by the appropriate operating function. Suggested indicators include:

- Transportation - revenue kilometres per transportation dollar, per employee, or per pay hour
- Maintenance - revenue kilometres per maintenance dollar, per employee, or per pay hour
- Administration - revenue kilometres per administrative dollar, per employee, or per pay hour

The above indicators will need to be supported by a qualitative assessment of the impact of the above factors on resource performance through questioning the management of each operating function. The strategic indicators, which have been outlined in previous sections of this chapter, will be useful in this regard, as shortfalls in these indicators may be indicative of shortfalls in the resource policies of the policy group. For example, if management are unable to easily

terminate staff, or if there has been a freeze on hiring and vehicle replacements, then operating costs and deficit may increase because of higher unproductive time, overtime and maintenance costs; this would show up in the financial indicators.

The best source of information are the trends in the system's own performance as obtained from annual or other management reports. It is difficult to evaluate the performance of transit resources as compared to other transit properties, primarily because there are inconsistencies in the reporting of hours or kilometres between properties. Thus trends and targets cannot be readily established for comparison purposes.

4.5 BUDGET FORECASTING

One of the most important strategic activities of transit management is the forecasting of capital and operating budgets for the transit system and the presenting of the budgets to the policy group for approval.

Budget forecasting involves estimating, for the next year, the number of passengers by fare category, passenger fares and other revenue by category, operating costs by function, equipment and plant requirements, capital expenditures, debenture interest and other related financial charges. These determine the provincial capital and operating subsidies, and the contributions to the deficits from reserve funds and from other city departments or area municipalities. The budget also establishes the levy to be imposed on the taxpayers of the municipality.

In all municipalities, budgets are submitted for the next year along with a statement giving the rationale for major budget variances from last year's budget. Municipal budgets are also forecast for the next five years in order to provide the policy group with an insight into the trends in revenues and costs as an aid in longer range budget forecasting. These forecasts, when accompanied by a review of the trends in service and costs and an assessment of what has to be done at the policy level, to keep costs within the financial capability of the municipality, represent a five year strategic plan for the transit organization.

Questioning Performance

Budget forecasting is influenced by all of the factors outlined earlier in this chapter. In fact, budgets cannot be prepared without a detailed knowledge of the service, revenue and resource policies of the policy group.

Therefore, in reviewing this activity, the main area to be examined is the interaction which takes place between the policy group and transit management before, during, and after the budget preparation process. Typical questions which should be reviewed include:

- o How does the policy group establish revenue and cost adjustment guidelines for the preparation of the budget?

- o How is each expenditure justified; for example, is a zero-based budgeting approach used? What trade-offs can be made between budget items?
- o To what extent does the budget reflect improvements in service performance and labour productivity? Is the policy group concerned with this or is it more concerned with keeping overall cost increases to a given level regardless of performance?
- o To what extent does the budget reflect improvements which will encourage both growth in ridership and efficiencies in operation? Some budgets just recognize the impact of inflation on the services and costs, and because of restraints do not allow for growth.
- o During the budget preparation process, to what extent does transit management interact directly with Council to discuss the trade-offs, to review alternatives, to evaluate trends?
- o To what extent does transit management consider ways to minimize both the municipal and provincial contribution to capital and operating deficits? Does it consider ways to use existing provincial funds more productively in the improvement of service and/or in the application of more advanced technology?
- o After the budget has been prepared and approved, to what extent does transit management keep the policy group regularly informed of budget variances? To what extent does transit management meet regularly with the policy group to discuss ways that the expenditures can be better controlled, particularly those expenditures that are not the direct responsibility of transit management, such as administrative charges and maintenance costs which may be carried out for the transit system by other departments in some cities?

Performance Indicators

The budget forecasting activity determines the cost-effectiveness of the transit system and the financial requirements for the transit organization to meet its service obligations, within the policy framework established by the policy group. Therefore, it is important that transit management support their budget requests with strategic performance indicators and a plan of action which will enable the policy group to judge the cost-effectiveness of the budget when reviewing it for approval. These strategic performance indicators have been explained throughout this chapter, and are listed for reference purposes in the next section. For this activity, all of the available performance indicators should be used in support of the budgeting process.

4.6 INFORMATION SOURCES AND ANALYSES METHODS

Strategic decision making requires management and the policy group to project on paper how the transit system may perform in the future if present service and

funding policies are continued and what may happen if these policies are changed. This requires good background information and analysis procedures. These vary according to the size of the property and the degree of detail desired. A simplified process can be used, however, to provide information for the Phase One review. This involves:

1. Data Assembly - from existing records including:

- enabling legislation and by-laws;
- policy documents and statements;
- key reports which influenced decision-making;
- performance reports, plans and budgets submitted by management;
- past five year financial statements (revenues, operating costs, capital costs);
- past five year operating statements (manpower, vehicles kilometres, hours, passengers);
- past five year and available future projections of population and relevant demographic data from the City Planning Department;
- past five year OUTA/MTC transit operating statistics;

2. Past Trends in Transit Performance Indicators

Plot of the past yearly trends in transit performance indicators including:

- 1) level of service - revenue kilometres/capita
- 2) ridership level or market penetration - revenue passengers/capita
- 3) cost efficiency - operating cost/revenue kilometre
- 4) average fare - revenue/passenger
- 5) service productivity - revenue passengers/revenue kilometre
- 6) financial performance - revenue/operating cost
- 7) cost effectiveness - net operating cost/passenger
- 8) tax burden - net operating cost/capita

By way of illustration, plots of performance indicators for Ontario urban transit properties are provided in Exhibit 4.2 at the end of this chapter. The plots are for the last ten years for transit properties serving populations under 100,000, between 100,000 and 1,000,000, and over 1,000,000. The plots show the average within each group and are not indicative of the performance of any one property or municipality. That is, being above or below the line does not necessarily reflect better or worse performance. This varies depending on local policies and standards, also on local demand, the development pattern and environmental conditions in each community.

3. Past Trends in Municipal Indicators

Plot of the past yearly trends in municipal indicators including:

- 1) population growth; distribution by age group
- 2) unemployment rate
- 3) total revenue and expenditures
- 4) assessment
- 5) other indicators to show position of the municipality such as retail sales volume, industrial output, age distribution

By way of illustration, plots of municipal indicators for Ontario municipalities are provided in Exhibit 4.3 at the end of this Chapter. The plots are for the last ten years for the sum of all municipalities. In addition, a plot of the projected Ontario population by age group is provided to illustrate how the age structure is changing.

4. Forecast "Trends" Position with no Policy Changes

Plots of the expected five year trend in level of service, ridership level, and cost efficiency. These trends should be shown as a projection of the plots in Step 2.1, 2.2, 2.3 and 2.4 above, assuming that there will be no change in service or fiscal policies which will cause service, ridership, cost and fare trends to be altered. This step should also include a plot of the expected five year trend in population as a projection of the past trends in Step 3.1. On the basis of these trends projections, the other performance indicators can be forecast as follows:

- by applying the trends in service levels to the population projection, annual revenue kilometres can be forecast for future years
- by applying the trends in cost efficiency to the forecasted revenue kilometres, annual operating costs can be forecast for future years
- by applying the trends in ridership levels to the population projection, annual revenue passengers can be forecast for future years
- by applying the trends in average fares to the forecasted revenue passengers, annual passenger revenue can be forecast for future years
- with this information, five year projections of the past trends in Step 2.5, 2.6, 2.7 and 2.8 can be made.

5. Identify Policy Options

Establishment of "desired" targets for service levels, ridership levels, cost efficiency, and average fares based on changes suggested by a review of past policy and the position of the municipality as indicated by the plots in Step 3. These "desired" targets should be shown on the plots for Step 2.1, 2.2, 2.3 and 2.4.

6. Forecast "Desired" Position with Revised Policies

Repeat Step 4 using the desired targets in Step 5; and recalculate the performance indicators.

7. Define Service Standards

Based on the above targets, develop desired service standards for the next five years.

The above analysis isolates and evaluates the strategic performance issues which are under the control of and therefore can be influenced by the policy group; that is, issues related to service levels, revenues, and the cost structure.

4.7 SUMMARY

The review of the strategic decision-making function would involve an assessment of the "trend" and "desired" positions of the transit system, as determined in Section 4.6. These positions are based on assumptions concerning the service levels, revenues, and cost structure which are within the control of the policy group.

This "futures" information coupled with the past trends information and the knowledge obtained from the other sections of this chapter will enable the reviewer to assess:

- o how strategic decisions are handled by the policy group and its transit organization;
- o what the impact of these decisions are on the past performance of the transit system, and what the impact is expected to be over the next five years;
- o and how effective are the communications between transit management and the policy group in conveying the position and future prospects of the transit system.

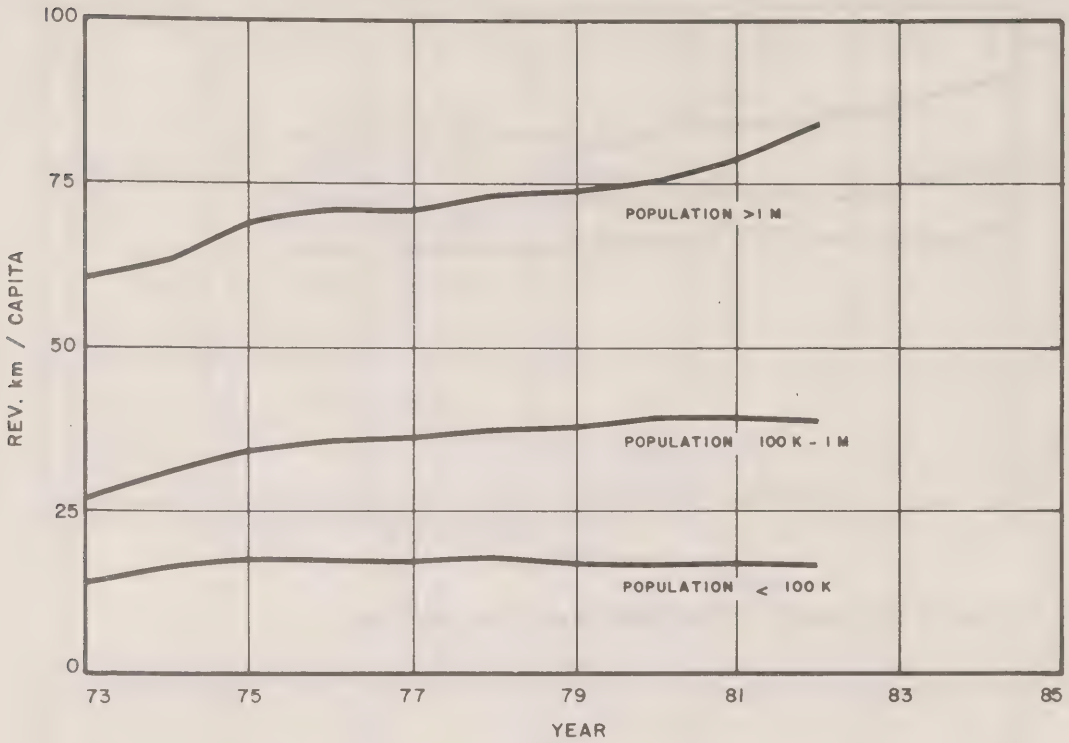
At the conclusion of this assessment, a report should be produced which focuses on how the policy group might modify its policies to improve performance. This should also indicate how the policy group might modify the corporate framework and communications process to aid transit management in keeping it better informed of the strategic issues.

**PERFORMANCE INDICATORS
FOR ONTARIO URBAN TRANSIT
PROPERTIES AND MUNICIPALITIES
1973-1982**

**Source Ontario Ministry of Transportation
 and Communications**

ONTARIO URBAN TRANSIT PERFORMANCE INDICATORS

LEVEL OF SERVICE - Revenue km/Capita



MARKET PENETRATION - Passenger/Capita

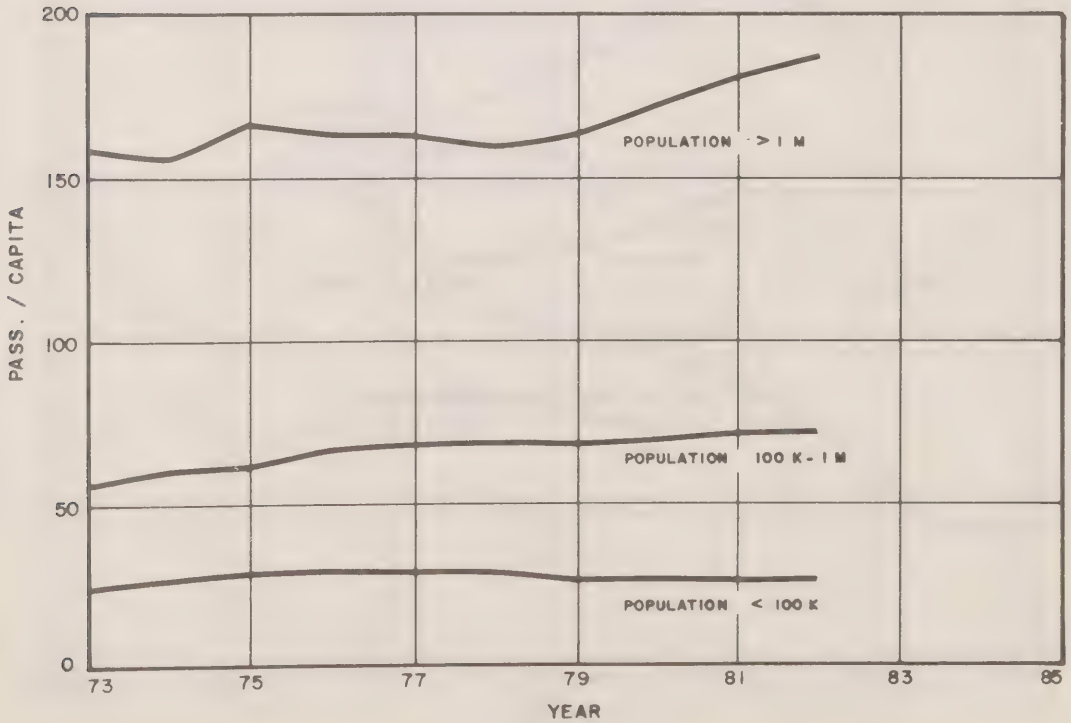
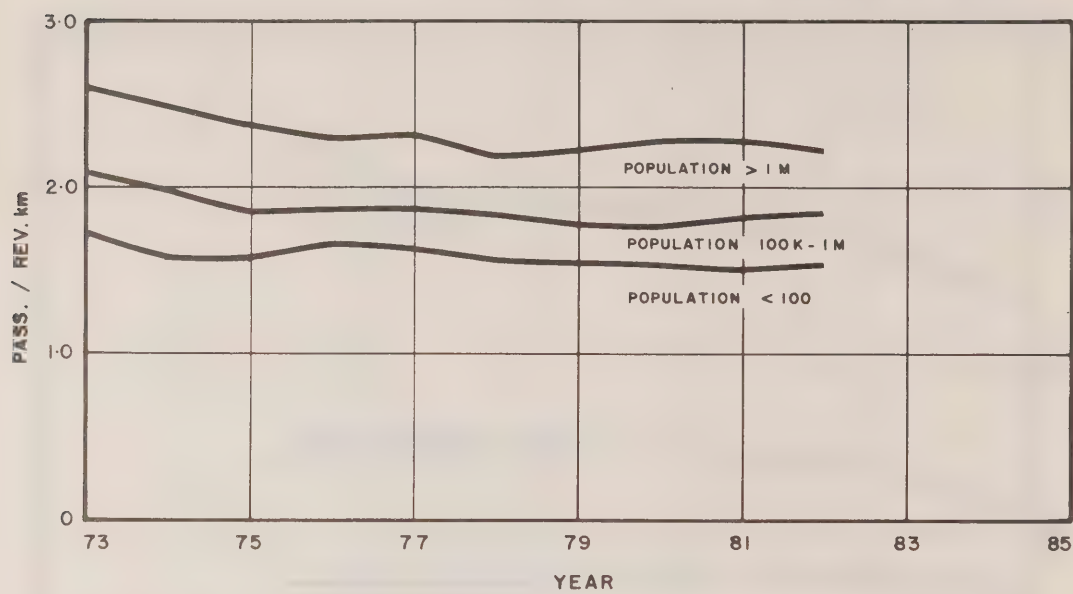


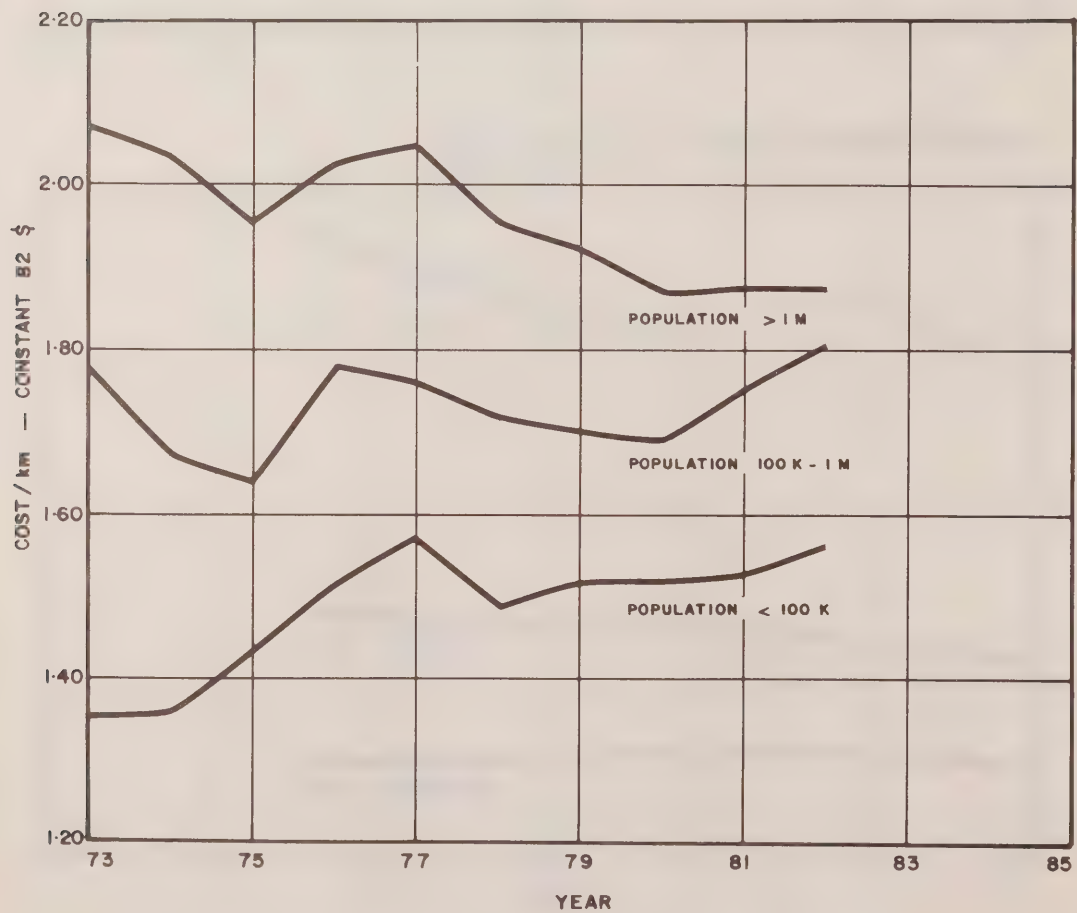
EXHIBIT 4.2.1

ONTARIO URBAN TRANSIT PERFORMANCE INDICATORS

SERVICE PRODUCTIVITY - Passenger/Revenue km

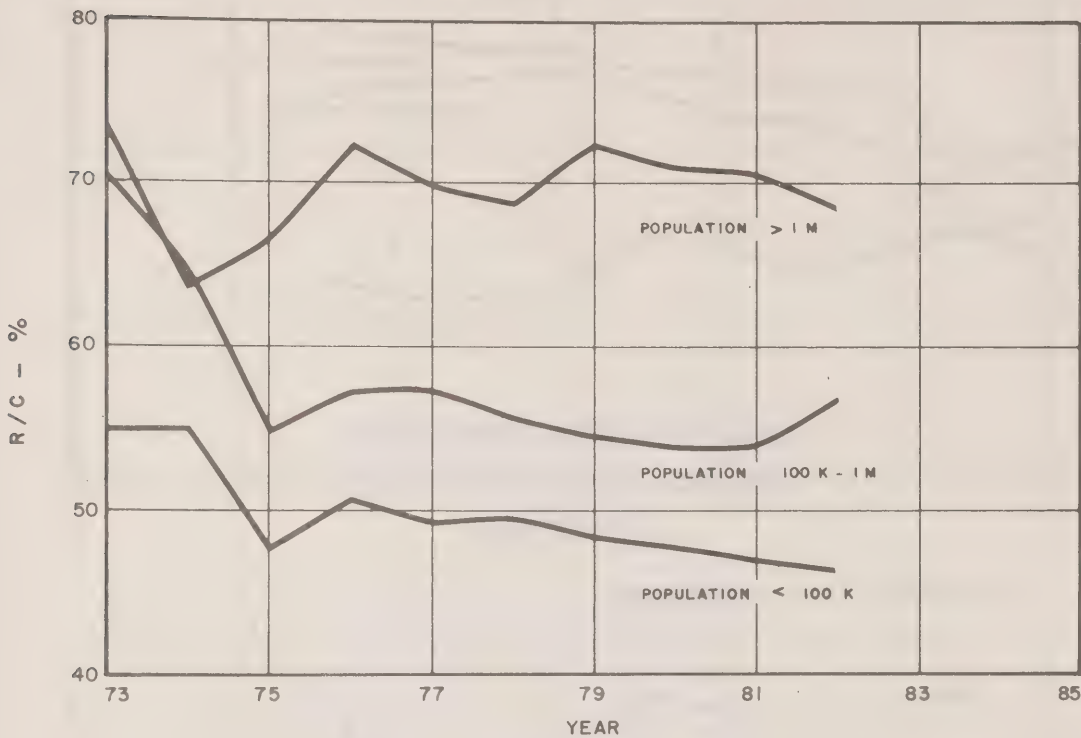


COST EFFICIENCY - Operating Cost/Revenue km

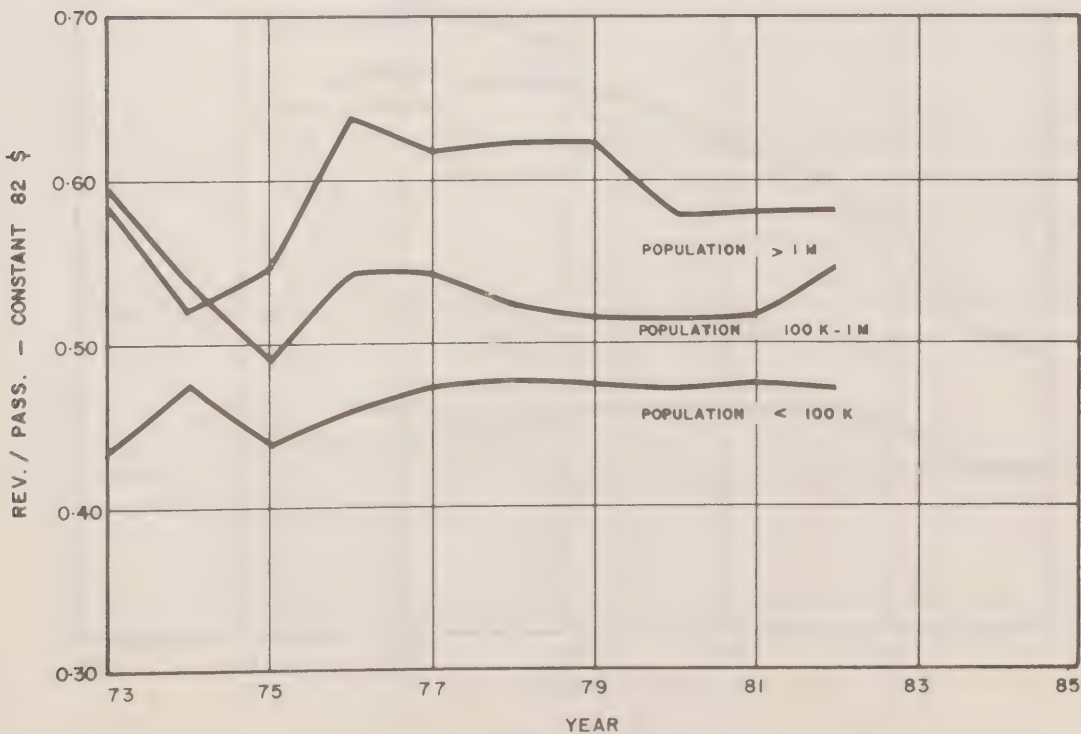


ONTARIO URBAN TRANSIT PERFORMANCE INDICATORS

FINANCIAL PERFORMANCE - Revenue/Operating Cost

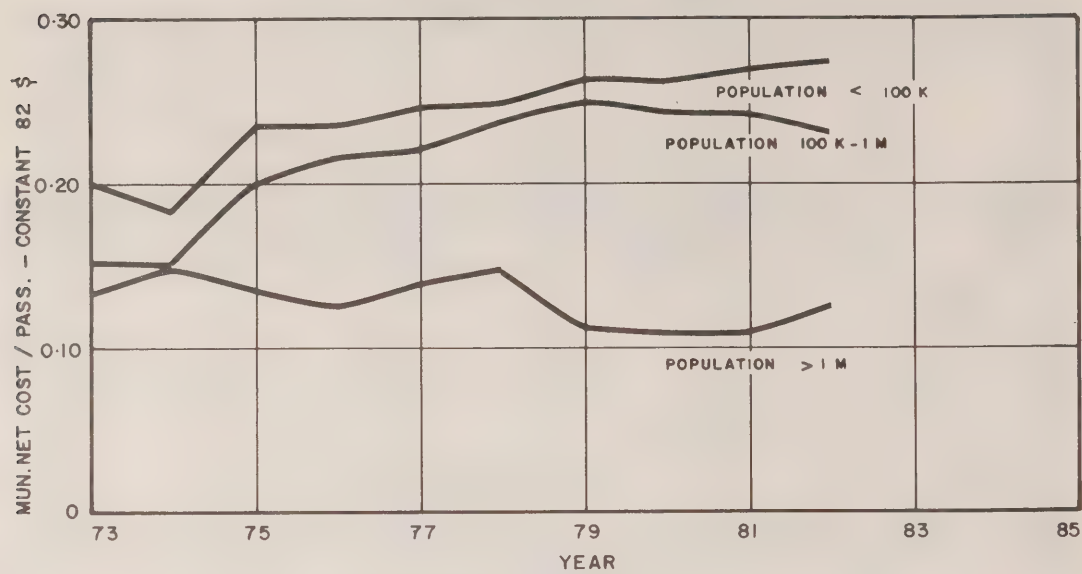


AVERAGE FARE - Revenue/Passenger

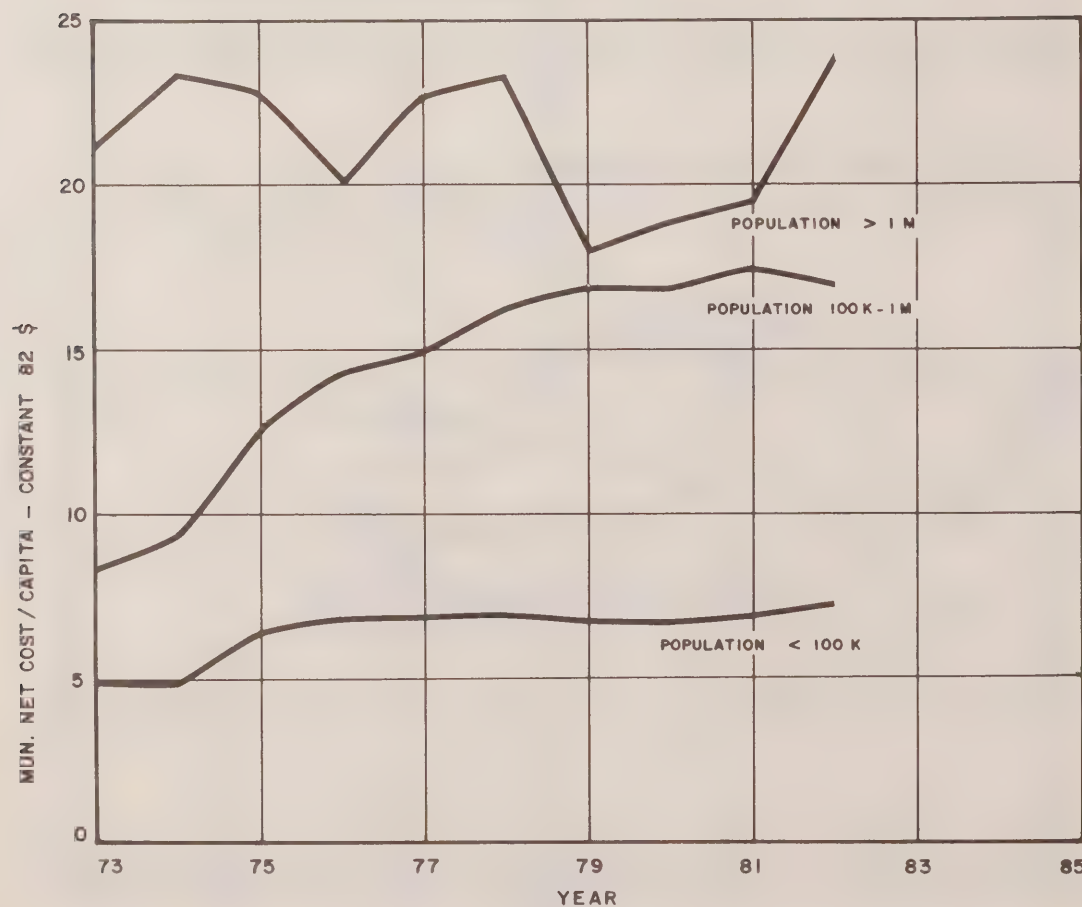


ONTARIO URBAN TRANSIT PERFORMANCE INDICATORS

COST EFFECTIVENESS - Net Cost/Passenger



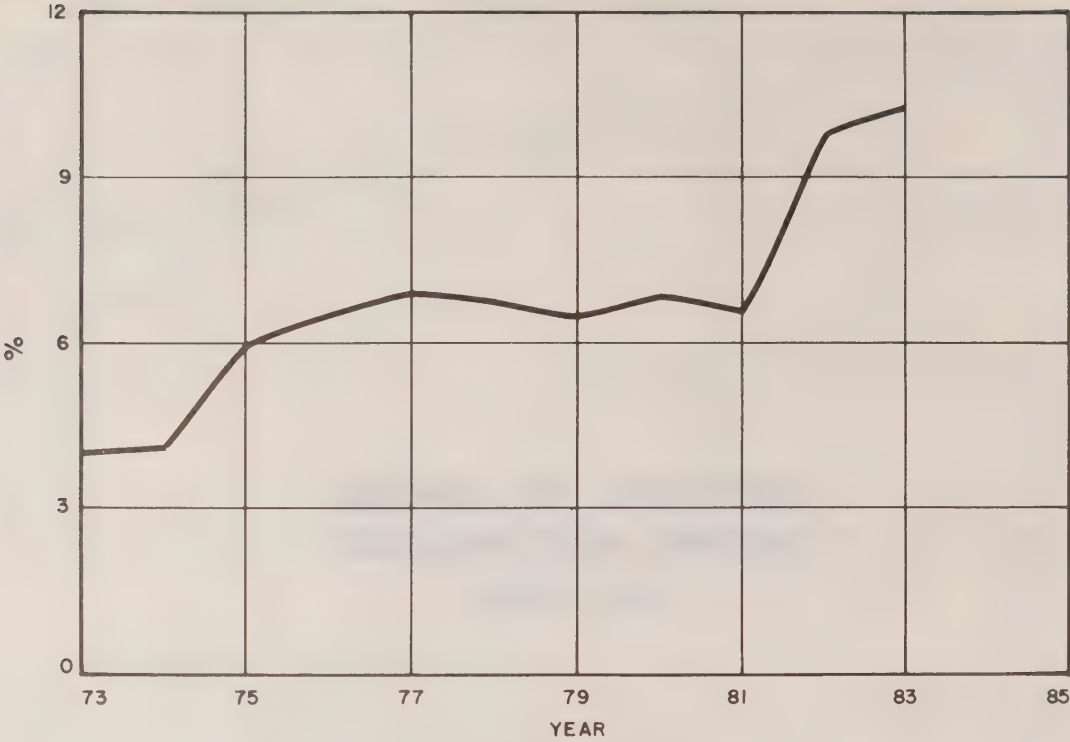
TAX BURDEN - Net Cost/Capita



**INDICATORS INFLUENCING
ONTARIO MUNICIPALITIES
1973 – 1982**

INDICATORS INFLUENCING MUNICIPALITIES

UNEMPLOYMENT RATE - Ontario



FINANCIAL DATA - Ontario Local Governments

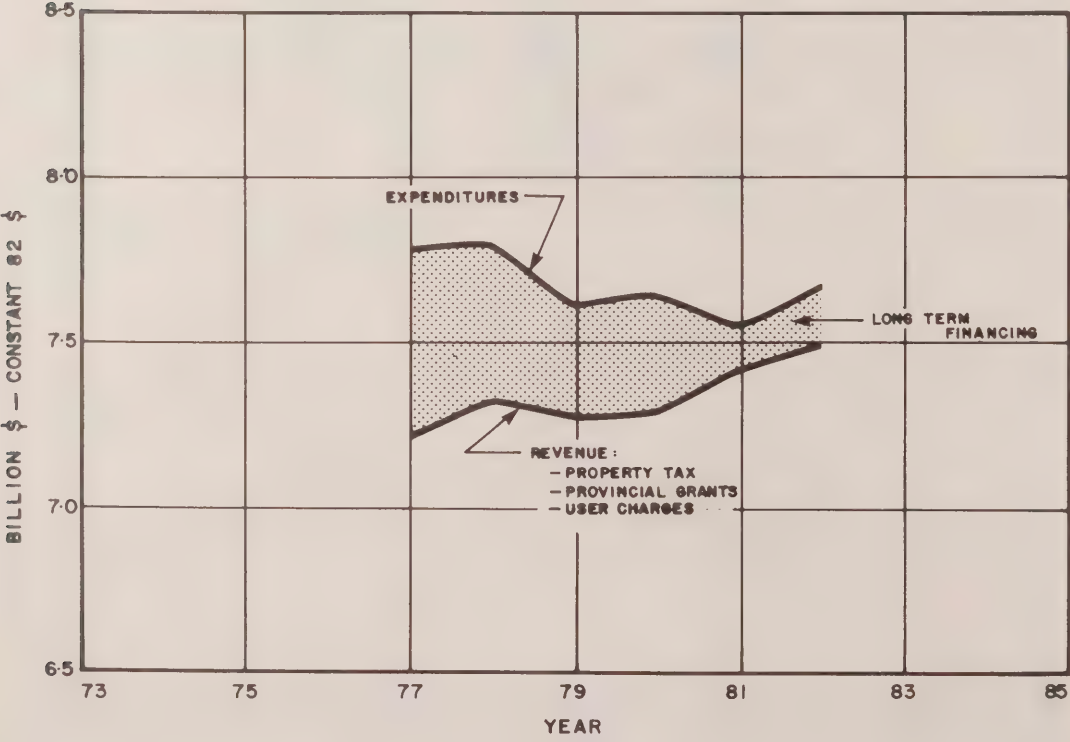
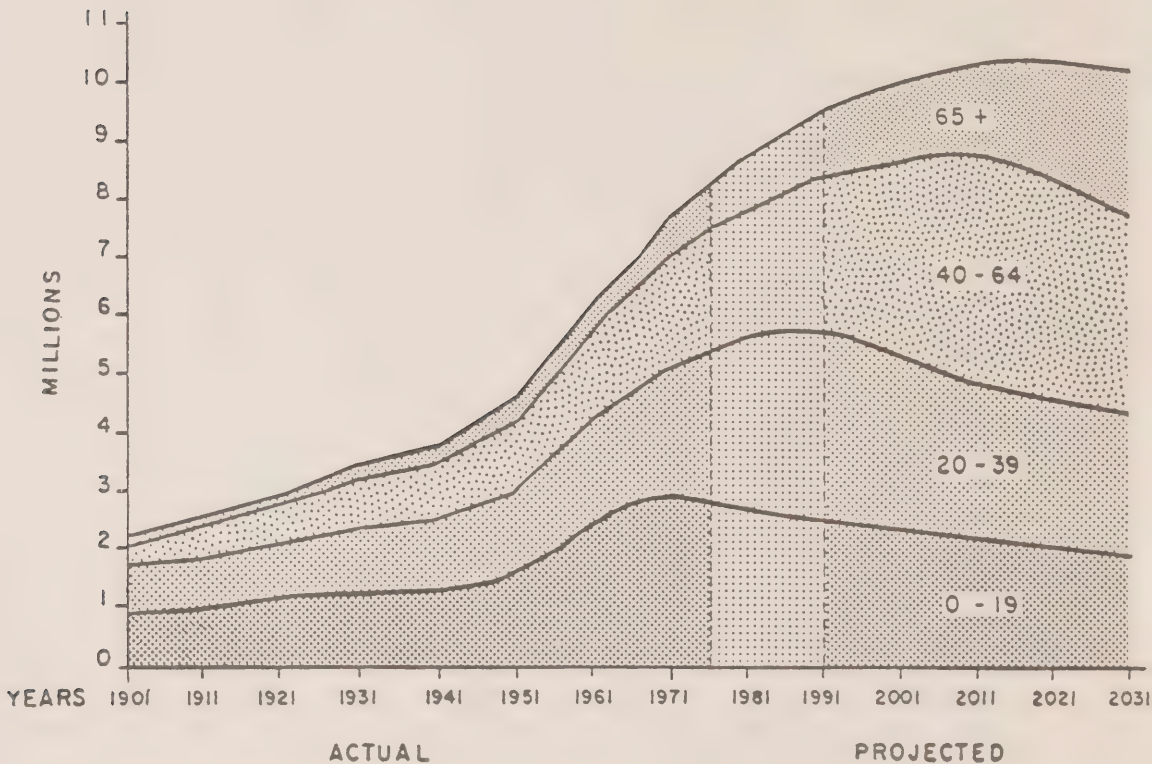


EXHIBIT 4.3.1

INDICATORS INFLUENCING MUNICIPALITIES

DISTRIBUTION OF THE POPULATION BY AGE GROUPS - ONTARIO



MAJOR POINTS REGARDING AGE STRUCTURE OF THE POPULATION

- 0 - 19 CONTINUE TO DECLINE, PARTICULARLY SHARPLY OVER NEXT TEN YEARS
- 20 - 39 FAMILY FORMATION AGES INCREASING UNTIL 1991, THEN DECLINING AS BABIES OF FIFTIES AND SIXTIES MOVE PAST CHILD BEARING AGES
- 40 - 64 CONTINUING TO INCREASE TILL 2001
- 65 + INCREASING SHARPLY OVER WHOLE FORECAST PERIOD

SOURCE: D. FOOT, PUBLIC POLICY AND FUTURE POPULATION IN ONTARIO

5 PLANNING

Planning activities create a two-way bridge between the strategic decisions that set the overall targets and standards for the transit system and the delivery of the service on the street. They provide information as input to management and the policy group in setting service policies on the one hand, while translating these strategic decisions into routes and schedules for the day-to-day operation of the transit system. They also provide information for marketing the transit services. Planning, therefore, has a major role to play in achieving good system performance that will be effective in meeting the community's needs and efficient in doing so at least cost.

Planning activities may be subdivided into four main areas.

- o Service Planning, dealing with the route network and service frequency or headway.
- o Operations Planning, dealing with efficient on-street operation of these routes.
- o Land Use Planning, integrating transit with local development objectives.
- o Market Research, to understand the nature of the transit market.

These four activities overlap to a certain degree and interact not only with one another but with the activities described in the other chapters of this report.

Good planning requires an understanding of the factors that influence system performance. The nature and role of public transit has changed significantly over the past ten to fifteen years. Provincial and local funding have created an expectation that the transit system should be used as a tool to support the social and land development policies in the community, and not only to satisfy its transportation needs. However, there is also a limit to the funds available. Planning is the means by which the implications and trade-offs between these often conflicting objectives can be evaluated before decisions are made in the interests of better service or efficiency to change the service.

Planning is carried out in three levels of detail. Strategic planning, as discussed in Chapter 4, deals with the broader issues of the role for transit in the community into the future. Service planning defines the route network and formulates standards for service over the near term. Operations planning details and fine tunes schedules for day-to-day operation on a seasonal basis. To be effective there must be feedback between each level. Further, planning is not a one shot review with consultant participation; but an ongoing process with someone from the transit system being responsible for a continuing review, once the methodology has been established.

It is recognized that there is a considerable variation in the size and complexity of Ontario transit systems and consequently the review of planning activities should be tailored to meet the needs of the individual property. However, all

properties, whether large or small, must plan ahead if they are to avoid management by crisis. The effort spent in planning will provide background information to make the right decisions concerning service and operations. Information collected for this purpose will pay off handsomely in planning efficient operations and in confirming that this is being achieved in practice.

5.1 SERVICE PLANNING

Service planning investigates the demand for transit service in the community and plans the route network and headways to meet these needs. It influences the system performance by identifying where routes should be added or changed to improve the effectiveness and efficiency of the system. In order to plan service and evaluate the need for changes in the service, policies and standards must be established which reflect the overall service, fiscal and resource policies as determined by the policy group. Decisions on whether to change the route network may then be taken based on an analysis of the impact of these changes on passengers as well as financial performance, using these standards as a guide.

Route Planning - This is the means by which the route network is reviewed and modified when necessary to meet changing conditions. Ridership on existing routes and the requirements to transfer between them will indicate where changes should be considered. In addition, the effectiveness of the route network and headways in serving existing and proposed residential, commercial and industrial development as well as schools, hospitals, homes for the elderly and recreational activities should also be examined.

Ridership counts and origin-destination surveys will provide information on present demand. As discussed later in this chapter, the Official Plan, zoning by-laws and other information from the City Planning Department will identify the location of existing and future major traffic generators to be considered in route planning. Market research will also assist in route planning. The need for route modifications, new garages, etc., is then evaluated considering the implications on costs and revenues. Service policies and standards are required to assist in this evaluation.

Service Standards - These reflect the strategic goals set for the transit system by the policy group. They specify how these goals are to be met in terms of the quantity and quality of service to be provided. They should define the area to be served by the transit system and accessibility standards which specify the maximum walking distance to a route, also the maximum headways and hours of service during weekdays and at weekends. Minimum financial standards for extending or retaining routes should also be given in terms of passenger loadings per bus trip, revenue to cost ratio, or both. Special standards that apply in meeting the needs of the handicapped, the elderly and students should also be spelled out where applicable. The standards may also set targets for travel time as compared to auto.

The availability of these standards will simplify the process of evaluating the performance of present service and making decisions with respect to new services in a consistent manner. Some or all of them may be part of the policies

approved by the policy group, as discussed in Chapter 4, Strategic Decision Making.

Performance Indicators

Performance indicators that will assist to measure the effectiveness of service planning are:

- Riding habits, annual rides per capita;
- Population Served, number of persons in the community having transit service available to them, i.e., within 300, 400, 500 m., etc.
- Modal Split, percentage of persons using transit vs. autos from residential areas, industrial areas, commercial areas, etc.
- Revenue/Cost Ratio, for individual routes and the system, the passenger revenue compared to the cost of providing the service.
- Density, revenue passengers per route kilometre.
- Transit Travel Time, travel time from origin to destination including walking time to and from home and office, number of transfers.

The information for these indicators may be obtained from annual reports, population and employment figures from the City Planning Department, ridership surveys, existing schedules and time tables. Other sources are Statistics Canada and the Ontario Ministry of Transportation and Communications.

Questioning Performance

The types of questions that will be of value in assessing performance in service planning follow.

- o What policies and performance standards currently guide the system operation? What process is followed in establishing the policies and standards?
- o What communication is there with political bodies and community groups in establishing the policies? Do these interested groups understand and accept the role expected of the transit system?
- o How often are the route network and headways examined to determine if they should be extended or reduced? What factors are considered in planning service charges.
- o How many persons will be brought into "the area served"? Is there a significant improvement in meeting the mobility needs of the community? Is this a transit-dependent area?

- o How many kilometres will be operated and how much new riding and revenue will be generated? What is the revenue/cost ratio, the passengers/hour or passengers/kilometre ratio, the peak load factor? How do these indicators compare to existing routes?
- o How many present riders will be inconvenienced by the change? To what extent? How do these disadvantages of the routing change compare to the benefits afforded to the new riders? How do the trade-offs of advantages and disadvantages relate to the cost of providing the new service?
- o What is the nature of the anticipated ridership? Trips not previously made, trips previously made by auto, diverted riding from existing routes, etc?
- o How does the travel time compare with private autos? Is it sufficiently competitive to be attractive? Can the speed be improved through traffic techniques, express operation, etc? Will the service increase or reduce traffic congestion? Are there any means of improving these conditions?
- o How well does the service meet the various anticipated travel patterns, i.e. work, shopping or school trips? Which are the most important?
- o Have the political and community preferences been correctly interpreted? What communication has there been with political bodies, ratepayer groups, etc., in designing the new service?
- o To what extent does the new route support development policies and proposals of the community? Is this particular proposal consistent with known future development, both land use and roadway? Will such future developments compromise the routing now being proposed?
- o Should the service penetrate the residential areas with a consequent increase in running time, or should the passengers be expected to walk further to a more direct routing? What are the trade-offs?
- o Is the new service based on transportation needs, or social obligations? If primarily in support of social objectives, is there a legitimate reason for seeking special funding?
- o Is there a need for Sunday, Saturday, etc. service, and is the service proposed consistent with policies and standards?
- o Is there a need for additional facilities - garage maintenance facilities, terminals, etc? If so where should they be located? What determines the need - overcrowding of present facilities, excessive deadhead mileage? What is the trade-off between additional capital cost and ongoing excessive operating costs? When will it be required? Are any changes in zoning by-laws necessary to build facilities in a location that will minimize future operating costs?
- o What is the priority for Proposal A as compared to Proposal B? How does the timing relate to the budget?

- o How does ridership on our system compare to other transit properties and is there a reason for the difference?

5.2 OPERATION PLANNING

Operation planning focuses primarily on the performance of the service provided on each route. It is directly related to the efficiency of day-to-day operations, and requires detailed information on individual route operation. The schedules provided must be based on up-to-date ridership information since this has a major influence on the total operating costs. Service standards and policy headways play an important role in setting the schedules, but regular review is essential to fine tune the service levels on a seasonal basis to meet changing demand. This will indicate where to introduce schedule changes, short-turning, interlining express service, traffic regulations, or other measures to maintain and improve schedule speeds.

In achieving an efficient operation plan for the transportation department, the important factors are those that will improve the attractiveness of service to passengers and those that contribute to the cost of providing the service. The extent to which the effectiveness and efficiency of operations can be improved depends on cost, schedule speed, service regularity, accessibility and convenience.

Cost: The gross cost of providing the service depends on the duration and frequency provided, speed, delays, impacts of the collective agreement, maintenance practices and a host of other elements. Good operations planning attempts to improve efficiency and to control costs by tailoring service closely to demand.

Scheduled Speed: Scheduled speed is one of the major determinants of cost and every effort must be made to improve this. It is affected by traffic congestion, preferential treatment for transit vehicles, parking restrictions, stop spacing, express operation, etc. Travel time is also important for the passengers. It is determined by the operating speed, the distance from origin to destination, the directness of the routing and the number of transfers.

The street system must accommodate the public transit service as well as private automobile and trucking needs and, although many transit improvements can be implemented without adversely affecting other road users, some inconvenience may result. Similarly, parking restrictions benefit transit and others using the road but may be opposed by the abutting businesses. Trade-offs have to be made between higher transit operating speeds and these other interests.

Service Regularity: Service regularity is influenced by schedule adherence, vehicle availability (breakdowns, maintenance practice, spare allocations, etc.) vehicle loadings and stop dwell times, detours, route supervision, short-turning practices, new technology (centralized monitoring and information systems). The allowances in the schedule for layover time to take care of service irregularities should be reviewed to confirm that it is not overly generous, particularly at off-peak periods.

Accessibility: This factor relates to the ability of the service to provide reasonable and convenient access at the home end of the trip and at the work, shopping, school, etc., end of the trip, at the time the trip is necessary.

To a large degree accessibility is controlled by the route planning evaluation mentioned earlier, and the hours of the service (evenings, etc.). These are matters that require a policy decision within the guidelines framework. The location of stops, is also an important part of operations planning. Their frequency and location can have a major influence on schedule speeds and the number of buses required to maintain service on the route.

Convenience: Convenience is a rather broad term that includes accessibility, frequency, overcrowding, but also includes direct ride as well as shelter and protection at bus stops. The important areas for operation planning are convenient bus stop locations and headways that are reasonable while matching the established loading standards. An increase of 5 or 10 percent in loading standards can produce significant savings in operating costs.

Performance Indicators

The performance indicators with respect to operation planning are:

- cost/passenger
- cost/kilometre
- revenue/kilometre
- subsidy/passenger
- vehicle hours/vehicle
- schedule speeds
- schedule adherence
- number of shelters as percentage of total stop locations.
- transfer rate

The sources for this information includes cost data for individual routes' passenger counts at peak point locations, on-off counts and transfer counts at specific locations and waiting times; schedule adherence data; and speed and delay studies.

Much of the information and data listed above must be collected as input for the development of schedules, and other data is essential in the development of operating techniques - reserved bus lanes, preferential treatment at signalized intersections, more stringent parking or turning prohibitions, etc., all of which will improve the performance of the transit system.

Operations planning cannot be performed well without adequate information. The cost of collecting basic information of this nature at regular intervals is minimal, compared to the savings that may be produced and the evidence it provides on the performance of transportation operations for management.

Tracking these indicators over a period of time will indicate whether the system performance is improving or worsening, and suggest the reasons for any change in performance and the areas for closer analyses.

Questioning Performance

Typical questions are:

- o How is the present system monitored? Does the monitoring permit performance evaluation? What degree of sophistication in data collection can be justified?
- o Of the factors affecting operations, which ones are within the control of the transit authority and should be pursued internally, and which ones are controlled by other authorities?
- o Of the factors controlled by other authorities, what data and information has been assembled to seek their assistance and convince them of the need for measures that benefit transit operations?
- o What degree of schedule adherence is being achieved? How serious are the variations? What action is required to achieve greater adherence? Can signal timing be adjusted to improve operating speed?
- o Would reserved bus lanes be beneficial? To what degree? At what cost to other road users?
- o As with reserved bus lanes, are more stringent parking restrictions and traffic regulations warranted? What are the comparative advantages, disadvantages and trade-offs for the transit system, other road users and business interests?
- o Are ridership profiles on certain routes such that express or limited stop options can be implemented, possibly attracting more passengers while operating at less cost because of the higher speeds achieved? How many passengers could be inconvenienced and inconvenienced, and to what degree? Are park and ride lots in conjunction with express services a viable option?
- o How are bus stops located to obtain a balance between convenient accessibility and reasonable operating speed?
- o What investigations of new technologies have been undertaken, (automatic monitoring systems to improve regularity and reliability, computerized run cutting and scheduling for more efficient scheduling)?

- o How do you determine the most appropriate vehicle for varying demands? Is there an opportunity to improve efficiency by operating different vehicles - smaller or articulated?
- o How are seasonal fluctuations in demand reflected in the service provided at different times of the day, days of the week, seasons of the year?
- o Are there physical restraints affecting the transit system - missing roadway links, railway crossings, access to the transit routes, etc., the elimination of which may be justified in order to increase the viability of the transit service? What action is taken with respect to these limitations?
- o How can accessibility be improved as described under land use planning?
- o How much would it cost to improve the accessibility in relation to the number of residents affected?
- o Would staggered hours improve vehicle utilization by spreading the peaks? Will the community support such a program? Are there additional benefits for the employer and employee?
- o How many passengers transfer how many times? What is the average and maximum transfer time? What minor route changes are possible in order to minimize transfer inconvenience?
- o What schedule allowances are incorporated to avoid missed connections? Are timed transfer arrangements feasible at major locations? Is the bus physically able to "lay over" at designated locations to minimize transfer inconvenience? What instructions are given to the operators concerning transfer connections?
- o What combination of passenger volumes and waiting times justifies shelters? Is it physically possible to establish shelters at selected locations? How exposed is the bus stop location? What amenities do the shelters provide (seating, lighting)? Who maintains the shelters - the municipality or the transit authority?
- o Is it possible to minimize or eliminate the cost of shelters by including advertising within the shelter? Can the maintenance cost be part of the advertising contract associated with the shelters? Are service clubs, developers, or similar organizations participating in transit shelter programs? Should they participate? What legal arrangements are required to do this?
- o Are standard transit buses the appropriate vehicle for the service under consideration?

5.3 LAND USE PLANNING

The previous sections of this chapter deal with service planning and operational planning, both of which are mainly concerned with planning transit to be effective and efficient in serving existing development on a continuing basis. Land use planning, while not a responsibility of transit management, has a major impact on the future performance of the transit system. Consequently, transit management has to be aware of and have input into the development plans for the community.

Land use planning must include transit as a factor in achieving efficient community plans. The design of the road system and the location of commercial, industrial, residential and institutional developments will have an impact on the strategic planning of future transit service and the ability of transit management to support these developments efficiently, as discussed in Chapter 4 - Strategic Decision Making.

For many years transit services have been operated and expanded primarily in response to passenger demand. However it is also recognized now that transit is an essential element in land use planning. It can assist in the achievement of desirable population and employment distribution, in relieving traffic congestion and in reducing the need for road improvements, with their attendant environmental impacts on neighbouring properties. In short, transit may be used as a tool to support Official Plan policies and land use objectives. However, transit can only do so if the planners and politicians also recognize that good urban planning should improve the efficiency of public transit. This advocacy role is transit management's responsibility, through commenting on Official Plans, zoning by-laws and development plans.

Official Plans, These should protect property for efficient future operations where necessary. This includes items such as terminals, garages and transit right-of-way. High density residential and commercial development should be concentrated along transit routes to improve the efficiency of operations. Careful thought should be given to the location for new community buildings such as schools, hospitals, senior citizen homes and hospitals, to ensure that they can be served efficiently by existing or new transit services.

Development Plans, Residential and commercial development plans should provide for efficient routing and convenient pedestrian access to transit services. Terminal facilities should be considered in large shopping centres. It may be necessary and desirable to modify development plans at some capital expense to benefit the transit rider and reduce transit operating costs.

It may not be possible to satisfy the interests of all parties affected by development proposals. However, good communications between management, the City Planning Department, community groups and private developers will ensure that transit is taken into account in reaching decisions or compromises that will benefit transit operations.

Performance Indicators

There are a number of factors related to land use that must be considered if transit is to operate efficiently in the future. Certain data and information should be compiled to obtain integration of the public transit service with proposed developments while providing assistance to management in strategic decision making as discussed in Chapter 4.

These information requirements include:

- Population Data, current statistics and anticipated growth by location.
- Employment Data, current situation, anticipated growth trends in the composition of employment, i.e., manufacturing, industrial, service sector jobs, etc.
- Social Trends, percentage of women in the labour force, changes in age groups of potential transit riders, and location of elderly transit dependent groups.
- Economic Trends, inflation rates, energy prices, housing prices, etc., that may influence transit ridership.

For public transit to operate effectively and efficiently, it is essential that the community supports the role expected, and from an operating point of view this means land use and development plans that will assist in the delivery of efficient transit service in the future.

Questioning Performance

Typical questions to be raised in reviewing transit managements awareness of and involvement in land use planning follow.

- o What working arrangements exist between transit management, municipal planners and developers?
- o How does your Official Plan or other development plans affect transit? What is the density of the development and are the high density developments readily accessible to transit service?
- o Is the new road system designed exclusively or even primarily for automobile usage? What modifications would improve transit operations?
- o Does the residential subdivision plan consist of crescents and cul-de-sacs to enhance privacy without adequate transit routes? How is transit affected?
- o Is public transit expected to penetrate the area or will transit passengers walk to the transit service operating on the arterial roads? Are there walkways providing access to the arterial road service? Can they be provided?

- o Can the schools, shopping locations, senior citizen homes, etc., be readily served by transit?
- o What environmental concerns are generated by the bus service?
- o Is there provision for bus terminals, or off-street facilities at necessary locations?
- o Does the new development result in route changes which affect current passengers, and if so, to what extent?

5.4 MARKET RESEARCH

Market research provides information on the factors that influence the individuals choice of travel mode and opinion of transit service. These include trip purpose, car ownership, income level, type of employment, travel costs, travel time, comfort, convenience, reliability. A knowledge of the market is valuable both for service planning purposes, as discussed in Section 5.1 and for marketing and promotion as covered in Chapter 3. Without proper market research, marketing and advertising initiatives are by and large ineffective.

Market Identification: Market research is outward looking. It finds out what the existing and prospective customer wants and what transit management has to consider in meeting these needs, rather than treating customers as one group and expecting them to use the service because it is well run according to managements own standards. Market reserach augments the information obtained from the more traditional passenger origin-destination surveys and counts as described previously in this chapter.

Marketing and Promotion: For these purposes it is important to know what specific segments of the population can be attracted to transit and what both the existing passengers and others who live in the community think of the transit services. This will confirm if management is in fact doing a good job in the eyes of users and non-users and if services are well publicized. Market research guides the marketing program by providing background information to make sure that the right messages concerning the transit service and what it is accomplishing are being sent out and received by the passengers, prospective users and the community at large.

A carefully designed home interview or telephone survey supplemented with passenger surveys can provide basic information on travel characteristics and attitudes that will assist in planning activities and marketing programs. Examples of the data to be collected follow:

- Ridership Characteristics; age, sex, marital status, income, etc.
- Geographic Location; origin-destination information
- Trip Purpose; e.g., work, shop, school, etc.

- Frequency of Travel; daily, weekly, by time of day
- Reasons for Using Transit; convenience, cost, no car available
- Reasons for Not Using Transit; travel time, crowding, not convenient, free parking, not reliable, lack of time tables
- System Image; perception of performance and responsiveness to community needs.

Questioning Performance

Typical questions that will assist in assessing managements awareness of the transit market and the effectiveness of their marketing program follow.

- o What is the demographic composition of the municipality? Is the size of the student and elderly population groups increasing or decreasing? At what rate? How will ridership be affected?
- o What trends have been observed regarding:
 - size of households (single person or family)?
 - population shifts away from downtown?
 - number of automobiles per household?
 - employment locations?
 - senior citizen housing locations, recreational facilities and educational institutions?
- o What are the demographics of present riders? Are services and marketing information directed to the right groups?
- o What image does the public have of the transit system? Is this positive or negative? How can we improve our image?
- o What are the reasons for not using transit? What affordable changes could increase ridership and improve service for existing riders?
- o What are the attitudes of the public towards transit fare levels and subsidies?
- o What are the attitudes of the public towards supporting transit related transportation policies?

5.5 SUMMARY

The various aspects of planning - service, operations, land use, and market research are essential in bridging the gap between strategic planning and service delivery. This requires a strong data base and full knowledge of the attitudes and considerations that influence an individuals choice of transportation mode.

The review of planning activities will enable management to identify priorities for further investigation where these might be improved to realise better system performance. It may well require input from agencies other than the transit authority, depending on the administrative structure in the various municipalities.

There are obviously going to be a number of trade-offs and compromises in arriving at a system that optimizes effectiveness and efficiency in the transit operation while recognizing community social objectives and the needs of others using the available road system. Good background information, coupled with a frequent assessment of routes, headways and operations, is essential if these decisions are to be made in an informed way.

